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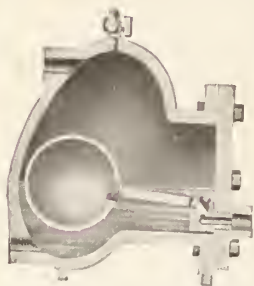


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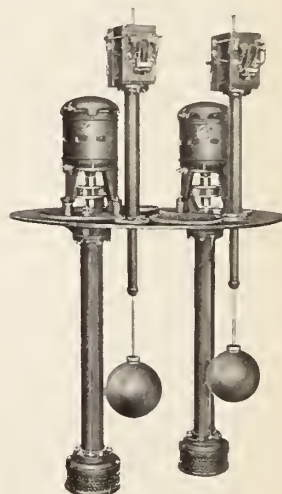
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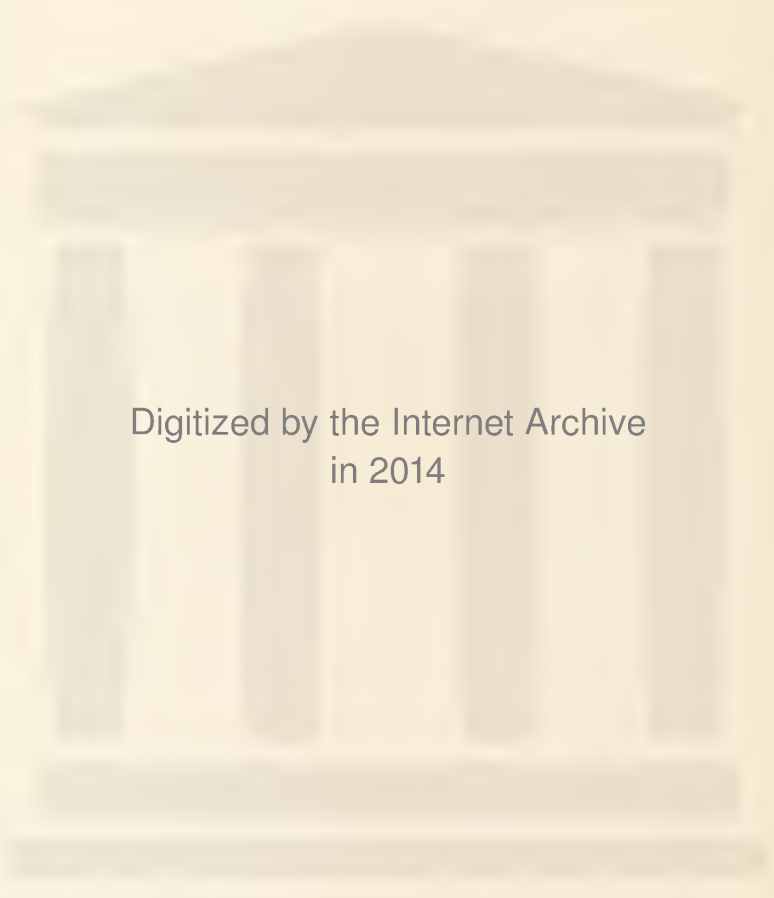


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YEAR BOOK
NEW YORK SOCIETY OF ARCHITECTS



The United Engineering Societies Building, 29 West 39th Street, New York City

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YEAR BOOK

NEW YORK SOCIETY OF ARCHITECTS

1918-19

EIGHTH EDITION

PRICE, \$5.00

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ACKNOWLEDGMENT

1. The New York Society of Architects has for years placed a copy of its Year Book upon the desk of every representative Architect in this State; has endeavored to increase its usefulness with each issue and, notwithstanding war conditions, now presents, with its compliments, its eighth consecutive volume.

2. To the American Institute of Architects and its Chapters; the Architectural League of New York; the Society of Beaux Arts Architects and all other Architectural Societies, and to the independent practicing Architects, this Society extends its greeting, and invites their full fraternal co-operation in the furtherance of the aims and ambitions of the Architectural profession. It is grateful for the liberal recognition accorded its efforts and particularly appreciates the many courtesies so generously extended by individual Architects, outside of its membership.

3. In presenting herewith its "Codes of Ethics" and "Professional Practice and Schedule of Proper Minimum Charges," for the use of its members, this Society hopes that these Codes will favorably influence the personal or professional intercourse between the members of the great Architectural family and its allies and clients.

4. To established Architects of standing and reputation, who may desire to embrace its aims and ambitions, the New York Society of Architects extends the hand of fellowship, to bid them welcome to its portals, to do their bit in the up-building of its structure.

5. To the Civil and Mechanical Engineers, Landscape Architects, Sculptors, Painters, Decorators and others of the Allied Arts, who have so successfully and agreeably collaborated with its members, this Society expresses its sincere appreciation, and extends a cordial invitation to all the practitioners of these professions to become Associate Members.

6. Junior Membership in this Society is open to worthy students and draughtsmen. In addition to furnishing each with a copy of its Year Book, this Society will endeavor to assist them in procuring positions and otherwise extending them a helping hand to eventually equip them to become Registered Architects.

7. To the Advertisers who have so liberally supported the Year Book, this Society is particularly grateful. It is a source of satisfaction to have intelligent advertisers appreciate that this book directly reaches all the Architects of this State, and many in other states, and becomes a constant companion and reference work on Building Laws, Contractors, Material Dealers, Methods of Construction, etc. This Society will continue to reserve its pages for advertisers of acknowledged merit, in whom it has every confidence.

THE ADVERTISERS in this book have been carefully selected, by an experienced Committee, with special reference to their capabilities and standing. For the convenience of the reader, an alphabetical index is presented on page LIII, and a classified index on page LV.

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CODE OF ETHICS

The New York Society of Architects reposes the utmost confidence in the integrity and lofty ambitions cherished by its members, and with every confidence in the result, could leave largely to each individual conscience the selection of an ethical path to follow. Custom, however, renders it the duty of every such Society to provide a "Code of Ethics" for the guidance of its members, and in compliance with this custom this Society prescribes the following:—

No member shall receive a commission, a substantial service or anything of value in connection with his professional services, except from a client; enter any competition except upon terms and conditions approved by this Society; undertake a commission while the claim of a brother Architect remains unsatisfied, unless with the consent of the Committee on Professional Practice of this Society; intentionally injure the reputation or professional standing of another Architect, nor shall he do anything that may reflect discredit upon the Architectural profession.

This Society expects each individual member to strive to be a man in all that the word implies; to possess artistic, constructive and executive ability of a high order; to be ever mindful of the full extent of his responsibilities; to prove his worthiness of that full measure of confidence reposed in him by those who place their financial, technical and aesthetic interests in his keeping; to adequately conceive, design and execute every commission with which he is entrusted with conspicuous ability and unswerving devotion to the interests of his clients; to accord his confreres, associates and subordinates full measure of credit and consideration, and extend full justice and liberal appreciation to all Contractors and others who defer to him, and upon whom he depends to produce the physical results of his conceptions.

This Society feels that every assumption of the title of Architect is to upbuild and illumine a career, and that it should be the ambition of every such beneficiary to contribute his full measure of reciprocal effort through cherishing and safe-guarding his stewardship of that title, throughout the enjoyment of its benefits, with such scruples, as will enable him at the end of his career to leave his unsullied title of Architect, together with his honorable achievements and living monuments as his grateful tribute to his profession.



CODE OF PROFESSIONAL PRACTICE and SCHEDULE OF MINIMUM CHARGES

Revised and Adopted September 15, 1914. Copyright 1918

No. 1. ALL SERVICES shall be performed and charges therefor liquidated in general conformity with the various stipulations and conditions recited herein.

No. 2. CLASSIFICATION — Architectural Services on all New Buildings shall be Classified as Regular Services, Minor Services and Special Services, and on all Existing Buildings as Alterations and Additions.

No. 3. REGULAR SERVICES shall be subdivided into Consultation Services, Preliminary Drawings, Small Scale Drawings and Specifications, Detail Drawings and Architectural Supervision.

No. 4. CONSULTATION SERVICES—All persons, Committees or other bodies who consult with Architects shall be considered as clients, and designated hereinafter as "The Owner."

Architects when so consulted shall inform and advise "The Owner" regarding any contemplated Building Improvements or Alterations, with the understanding that, in the event of any further development of the project, the Architects so consulted are retained for the execution of the Architectural services thereof. Should the project be delayed or abandoned, or should "The Owner" inform the consulted Architects at the first interview, that a competition is contemplated, or that they are not to be retained to proceed with any further development of the project, there shall then become due and payable to them only such consultation fees as they may consider the value of their services to "The Owner." (Par. 10.)

No. 5. PRELIMINARY DRAWINGS shall follow, absorb and thereafter embody the before mentioned Consultation Services and include such further Conferences, In-

spections, Studies of the Survey of the site and other conditions as the Architects may consider necessary to grasp the Owner's ideas, to which they shall devote such consideration, in the development of their solution of the problem, as may be necessary to prepare for the Owner's consideration, the delineated Preliminary Drawings. Upon their completion there shall become due and payable to the Architects, on account of the Regular Services, the Minimum Commission therefor (Par. No. 10), less any previous payments made on account.

No. 6. SMALL SCALE DRAWINGS AND SPECIFICATIONS shall supplement the said Consultation Services and Preliminary Drawings, and shall include their further study and development by the Architects, through the delineation of Plants, Elevations and Sections, together with the General Specifications designating the Materials and Workmanship entering into the construction. Upon their completion there shall become due and payable to the Architects, on account of the Regular Services, the Minimum Commission therefor (Par. 10), less any previous payments made on account.

No. 7. DETAIL DRAWINGS shall supplement the said Consultation Services, Preliminary Drawings and Small Scale Drawings and Specifications and shall include their further study and development by the Architects through the delineation of such Detail Drawings as the Architects may deem necessary to more clearly illustrate any of the before mentioned Drawings and Specifications. Upon their completion there shall become due and payable to the Architects, on account of the Regular Services, the Minimum Commission therefor (Par. No. 10), less any previous payments made on account.

No. 8. ARCHITECTURAL SUPERVISION shall supplement the said Consultation Services, Preliminary Drawings, Small Scale Drawings and Specifications and Detail Drawings, and shall include (where required by law) the Filing of Plans with the necessary Departments and the making of amendments thereto to conform with the requirements of the Administrative Authorities; also such General Inspection by the Architects or their Deputies, of Shop Drawings submitted at their offices; Models or other work in Studios; preparatory work in local Shops and Factories and of the Materials and Workmanship at the structure in course of Improvement as may be desired by the Architects to guide them in the exercise of their authority, either to direct the correcting, changing or modifying, or to reject or order the removal and reconstruction of anything which they may construe as not in accordance with the Drawings or Specifications, as well as to guide them in issuing Certificates for payments on Contracts. The Commissions for Supervision shall become due and payable to the Architects in instalments (Par. No. 10), based upon the gross value computed by them for the issuance of each Certificate. (Par. No. 21.)

No. 9. PLANS AND SPECIFICATIONS—The Architects' Services shall include: First—The preparation of one set of Preliminary Drawings. Second—Their modification and the preparation therefrom of one set of Small Scale Plans with Specifications, and, Third—Their further development into one set of Detail Drawings. The Architects shall furnish the prints of the Small Scale Plans for filing in the necessary Departments; three sets thereof to accompany three copies of the Specifications and contracts for signatures, which, when signed, one set thereof shall be retained by the Owner, one by the Architects and one by the Contractors, after which the Architects shall supply three additional sets of prints of the Small Scale Drawings, three sets of Specifications and one set of prints of the Detail Drawings for the use of Contractors.

No. 10 SCHEDULE OF MINIMUM CHARGES for Architects' Regular Services on all new buildings are based upon the various percentages of their cost. To ascertain these proper charges multiply the estimated or actual cost of the Building Improvement by the rate of percentage to be charged, as follows:

No. 11. MINOR SERVICES—On all new buildings, such as Lofts, Factories and Warehouses, where the elements of Design, Detail, Interior partitions, etc., are reduced to a minimum, the Minor Services are divided and rendered in the same manner as the Regular Services, but the Minimum Commission therefor shall be one-half of those charged for Regular Services, on new buildings costing less than \$4,000. (Par. No. 10.)

No. 12. SPECIAL SERVICES—The before mentioned Regular Services of the Architects shall not include Monuments, Mausoleums, Landscape Architecture, Decorations, Furniture, Fixtures, Rugs, Draperies, etc., designed by or purchased with the advice of or in consultation with the Architects. These Special Services are divided and rendered in the same manner as the Regular Services, but the Minimum Commissions therefor shall be the same as those charged for Regular Services on New Buildings costing less than \$4,000. (Par. No. 10.)

No. 13. ALTERATIONS AND ADDITIONS to existing structures shall be proportionately divided and rendered in the same manner named for New Buildings, except that the Minimum Commissions therefor shall be double those of the Regular Services for New Buildings. (Par. No. 10.)

No. 14. CHANGES OR MODIFICATIONS made by the Owner in any of the Drawings, Specifications or Documents, after their approval, shall be promptly executed by the Architects, and charged to the Owner as an addition to the other services.

No. 15. SEPARATE CONTRACTS—Should it be decided that the Owner's interest would be conserved by Purchasing the Materials or Executing a Building Improvement under numerous Direct or Separate Contracts, instead of under one General Contract, then the Architects, in addition to the performance of their Services, shall prepare the additional sets of plans and details and the separate specifications for each division of the work necessary therefor, and assume the General Management of the Building Improvement and perform the executive detail work, for which they shall charge, in addition to the other Services, an Additional Minimum Commission of 5 per cent., payable as follows: 1½ per cent. when plans and specifications are ready for bidders, 1½ per cent. as contracts are awarded, and 2 per cent. in instalments as stipulated for Architectural Supervision (Par. No. 8).

Estimated or Actual Cost of the Improvement	Preliminary Drawings (Par. No. 5) Percentage	Small Scale Plans & Spec. (Par. No. 6) Percentage	Detail Drawings, (Par. No. 7) Percentage	Arch't'l Superv'n (Par. No. 8) Percentage	Arch'ts Regular Services Percentage
Less than \$4,000	2	4	1 1-2	2 1-2	Total..... 10
\$4,000 to \$6,000	1 4-5	3 3-5	1 7-20	2 1-4	Total..... 9
\$6,000 to \$8,000	1 3-5	3 1-5	1 1-5	2	Total..... 8
\$8,000 to \$10,000	1 2-5	2 4-5	1 1-20	1 3-4	Total..... 7
Exceeding \$10,000	1 1-5	2 2-5	9-10	1 1-2	Total..... 6
	Equals 20% of Regular Services	Equals 40% of Regular Services	Equals 15% of Regular Services	Equals 25% of Regular Services	

No. 16. **EXPERT SERVICES**—The before mentioned Services shall not include the services of any Experts or Specialists. Should the Architects encounter Foundation, Water, Steel, Structural or other Engineering Problems; Heating, Ventilating, Power, Electrical or other Mechanical Problems; Sanitation or other Special Problems; or should Chemical or other Tests or Surveys, Borings, Audits, etc., be advisable, the Architects, should they deem it to the Owner's interest, may, with the said Owner's consent, select and retain the services of such Experts or Specialists as they may consider properly equipped to successfully cope with the conditions encountered, and all the expenses thereof shall be defrayed by the Owner, in addition to the other Commissions of the Architects. (Par. No. 10.)

All such services shall be considered a part of the cost of the Building Improvement.

No. 17. **INSPECTOR OR CLERK-OF-THE-WORKS**—The before mentioned Services shall include the Architectural Supervision, to the extent stipulated under Par. No. 8 herein, and not the constant personal superintendence of the Architects or their Deputies. Should the Architects deem it advisable to protect the Owner's interests through the constant personal Superintendence of an Inspector or Clerk-of-the-Works, they may, with the consent of the Owner, select and retain such services. All the expenses thereof shall be defrayed by the Owner, as an addition to the Architectural Supervision.

No. 18. **TRAVELING**—"The Owner" shall reimburse the Architects for all necessary or advisable Traveling expenses, Hotel bills and other expenses of a similar nature, incurred by the Architects or their Deputies, in the execution of a Building Improvement.

No. 19. **DISPUTES**—Should any dispute, Arbitration, Litigation or other Controversy arise with the Contractor or others, causing any delay or suspension of the work, or should the Architects' jurisdiction be questioned, then the Architects may estimate the probable cost, damage or effect thereof, and render a written statement to the Owner. The Architects shall compute their commissions thereon, which the Owner shall pay pending the settlement of the cause of the delay or suspension. Upon the settlement of the cause the commissions shall be readjusted upon the basis of the actual amounts.

No. 20. **ADDITIONAL SERVICES** rendered by the Architects, through the Negligence, Delinquency or Insolvency of the Owner, or any Contractors or others in the Owner's employ, or through any Survey, Arbitration, Litigation or other controversy of any kind shall be charged to the Owner.

No. 21. **COMMISSIONS**—Until the estimates are received from the Contractors, all Commissions shall be computed and liquidated upon the Architects' estimated total cost or value of the completed Building Improvement, based at the time upon the market values of new Materials and Union Labor, all of the quality stipulated, to which the Architects must add the Contractors' profits and such other expenses, services, etc., as are herein stipulated to be charged to the Owner. The various amounts for Architectural services shall become due and be charged to the Owner, when each Classification thereof is authorized or reached by the Architects in the prosecution of their work. All approximate amounts charged to the Owner shall be superseded by the actual amounts (if found to differ therefrom) when ascertained through the bids or authorization of each Contract, item or charge.

No. 22. **PAYMENTS** received by the Architects shall be credited as payments on account of the Entire Commissions for Architectural Services in the order named herein, and shall be so audited and adjusted.

No. 23. **SUSPENSION OR ABANDONMENT**—In case of the temporary or indefinite Suspension, or the Abandonment of any Building Improvement, the Architects' Commissions, as stipulated elsewhere herein, shall become due and payable.

No. 24. **INTEREST** shall be charged on all balances, from their due dates, at the legal rate in force in the State in which the Improvement is located.

No. 25. **DRAWINGS AND SPECIFICATIONS** are especially prepared for the execution of each particular Building Improvement only, and if used for any other purpose the Architects shall charge the full Commissions therefor as stipulated herein. All Drawings and Specifications are issued as Instruments of Service, with the distinct understanding that they are at all times solely the property of the Architects, and are to be surrendered to them upon demand at any time.

MEMORANDUM



ARCHITECTS, NEW YORK CITY

(By Post Office Addresses)

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 Adams, William, 15 W. 38th st.
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 Bossom, Alfred C., 366 5th av.
 Bosworth, William Welles, 527 5th av.
 Bowler, R. B., 101 Park av.
 Boyd, John T., Jr., 15 E. 40th st.
 Boyd, Wm. S., 203 W. 14th st.
 Boyland, J. P., 2526 Webster av., Bronx.
 Brady, Albert I., 15 Broad st.
 Brandt, John, 271 W. 125th st.
 Brazer, Clarence Wilson, 1133 Broadway.
 Brendon, Charles, 500 5th av.
 Brewster, Herbert R., 116 Nassau st.
 Brite, James, 18 E. 41st st.
 Brower, John, 118 E. 28th st.
 Browne, Fredk. C., 209 W. 102d st.
 Brun, Clement B., 405 Lexington av.
 Brunner, Arnold W., 101 Park av.
 Buchman & Kahn, 56 W. 45th st.
 Buckham, Charles W., 307 5th av.
 Budd, Katherine C., 527 5th av.
 Bunce, J. Oscar, 286 5th av.
 Burden, Chester G., 340 Madison av.
 Burley, James L., 299 Madison av.
 Burnett, Edw., 470 4th av.
 Busselle, Alfred, 132 Madison av.
 Butler & Rodman, 56 W. 45th st.
 Butler, George, 62 W. 45th st.
 Cady & Gregory, 40 W. 32d st.
 Caldwell, Charles H., 101 Park av.
 Campbell, James I., 976 Woodycrest av.

Campbell, Shiras, 103 Park av.
 Candler, Duncan, 753 5th av.
 Cardiff, J. A. F., 101 Park av.
 Caretto & Forster, 50 E. 42d st.
 Carlson & Wiseman, 666 5th av.
 Carpenter, J. E. R., 681 5th av.
 Carrere & Hastings, 52 Vanderbilt av.
 Carson, L. A., 7 E. 42d st.
 Casazza, Geo. J., 1133 Broadway.
 Casey, Edw. P., 149 Broadway.
 Chance, Geo. W., 47 W. 34th st.
 Chapman, Henry Otis, 334 5th av.
 Chapman, F. B., 2 W. 45th st.
 Chapman, Howard, 30 E. 42d st.
 Chapman, Josephine W., 46 Wash. sq.
 Chappell, Geo. S., 101 Park av.
 Chard, Thornton, 101 Park av.
 Chard, W. G., 101 Park av.
 Cherry, Wm. J., 17 E. 40th st.
 Child, Edw. S., 29 Broadway.
 Clark, C. S., 443 E. Tremont av., Bronx.
 Clark & Arms, 21 W. 45th st.
 Clinton & Russell, 32 Nassau st.
 Cobb, Henry Ives, 1465 Broadway.
 Cocker, Joseph C., 2017 5th av.
 Codman, Ogden, 340 Madison av.
 Coe, Theodore Irving, 32 W. 40th st.
 Cohen, Samuel, 32 Union sq.
 Colby, F. A., 15 E. 40th st.
 Collins, D. C. Newman, 14 John st.
 Comstock, C. B., 110 W. 4th st.
 Conable, George W., 46 W. 24th st.
 Congdon, Henry M., & Son, 18 Broadway.
 Conover, Warren H., 114 Liberty st.
 Cordes, A. W., 414 Madison av.
 Cornelius, Chas. P., 100 E. 17th st.
 Cornell, Frank T., G. Cent. Term.
 Covell, Wm. S., 101 Park av.
 Cox, John, Jr., 7 E. 42d st.
 Cram & Ferguson, 33 W. 42d st.
 Crane, Theodore, 15 W. 38th st.
 Croke, Anderson & Sunderland, 37 Liberty st.
 Crosier, Geo. P., 689 E. 223d st., Bronx.
 Cross & Cross, 681 5th av.
 Crow, Lewis & Wickenhoefer, 200 5th av.
 Cullen, Charles H., 101 Park av.
 Cunningham, Bertram, 120 Broadway.
 Darbyshire, P. W., 475 5th av.
 Daub, Walter T., 341 5th av.
 Davis, Albert E., 258 E. 138th st.
 Davis, Chas. M., 28 E. 49th st.
 Davis, MacGrath & Kiesling, 175 5th av.
 Day, John Bagley, 1265 Broadway.
 Deacy, William Henry, 569 5th av.
 Dean, E. C., 2 W. 47th st.
 De Gersdorff, G. B., 103 Park av.
 De Hart, John, 1039 Fox st., Bronx.
 Dehli, Arne, 154 Nassau st.
 Delano & Aldrich, 126 E. 38th st.
 Delehanty, B., 2 W. 45th st.
 Dell, Louis E., 1133 Broadway.
 De Meuron, F. A., 118 5th av.
 Denby & Nute, 333 4th av.
 Dennison & Hiron, 475 5th av.
 Denslow, L. E., 44 W. 18th st.
 De Rosa & Pereira, 150 Nassau st.
 De Rose & Cavaleiri, 509 Willis av.
 Detwiller, Chas. H., 48 Cedar st.
 Diemer, Julius J., 118 E. 28th st.
 Dietrich, E. G. W., 118 E. 28th st.
 Dillon, McLellan & Beadel, 3 W. 29th st.

Dilthey, Wm. J., 1 Union sq. W.
 Ditmars, Isaac E., 111 5th av.
 Dodge, R. Irving, 217 Broadway.
 Dodge & Morrison, 135 Front st.
 Dominick, Wm. F., 3 W. 29th st.
 Donegan, J. W., 39 Ann st.
 Dress, George, 1931 Madison av.
 Duff, Thos. J., 407 W. 14th st.
 Duncan, John H., 347 5th av.
 Dunn, T. F., 953 Woodycress av., Bronx.
 Dunnigan & Crumley, 391 E. 149th st.
 Ecob, R. G., 299 Madison av.
 Eisendrath & Horwitz, 18 E. 41st st.
 Eisinger, L. W., 52 Vanderbilt av.
 Ells, Irving B., 47 W. 34th st.
 Embury & Welsh, 132 Madison av.
 Emery, M. L. & H. G., 68 Bible House.
 Enell & Enell, 577 3d av.
 Ewing & Allen, 101 Park av.
 Farley, Frank C., 15 W. 38th st.
 Farrington, Robert M., G. 103 Park av.
 Fash, Robt. A., 163 W. 20th st.
 Fellheimer, Alfred, 7 E. 42d st.
 Felson, Jacob M., 1133 Broadway.
 Ficken, H. Edwards, 22 E. 17th st.
 Fisher, Jacob, 25 Avenue A.
 Fitz Mahoney, M. J., 15 E. 40th st.
 Flagg, Ernest, 109 Broad st.
 Flagg, Montague, 2d, 109 Broad st.
 Fletcher, Arthur G. C., 103 Park av.
 Ford, Butler & Oliver, 101 Park av.
 Forman & Light, 40 Cedar st.
 Foster & Gade, 15 W. 38th st.
 Franklin, L. Murray, Jr., 50 E. 41st st.
 Freedlander, J. H., 681 5th av.
 Freeman, Alfred, 29 W. 34th st.
 Freeman, Frank, 132 Nassau st.
 Friedmann, Robertson & Keeler, 90 West st.
 Friend, J. H., 148 Alexander av., Bronx.
 Frohne, W. C., 2463 Davidson av., Bronx.
 Frost, F. G., 19 W. 44th st.
 Fuhs, Adolph, 302 E. 87th st.
 Gage, Edson S., 28 E. 49th st.
 Gardner, Robert W., 43 Cedar st.
 Gavigan, Jas. J. F., G. Cent. Term.
 Gayler, Julius F., 15 E. 40th st.
 George, Thomas J., 32 Nassau st.
 Giele, Louis H., 1123 Broadway.
 Giesser, Wilhelm, 120 Broadway.
 Gifford, Charles A., 25 Park pl.
 Gilbert, A. F., 80 Maiden Lane.
 Gilbert, C. P. H., 1123 Broadway.
 Gilbert, Cass, 244 Madison av.
 Gildersleeve, Raleigh C., 303 5th av.
 Giller, Louis, 395 Broadway.
 Gillespie, C. H., 1123 Broadway.
 Gillespie, G. C., 19 Liberty st.
 Githens, Alfred M., 52 Vanderbilt av.
 Glasser & Co., 70 Manhattan st.
 Godley, Haskell & Sedgwick, 244 Madison av.
 Gompert, Wm. H., 171 Madison av.
 Goodhue, Bertram G., 2 W. 47th st.
 Goodwin, Bullard & Woolsey, 4 E. 39th st.
 Gordon, James Riely, 507 5th av.
 Gottlieb, Albert S., 101 Park av.
 Grant, Chas. C., 15 W. 38th st.
 Gray, Albert Morton, 1400 Broadway.
 Green, James C., 7 W. 47th st.
 Greene, Ernest, 5 Beckman st.
 Greenleaf, John C., 15 W. 38th st.
 Greenley, Howard, 101 Park av.

- Gregory, Julius, 56 W. 45th st.
 Griffin & Wynkoop, 30 Church st.
 Gronenberg & Leuchtag, 303 5th av.
 Gross & Kleinberger, 75 Bible House.
 Guldberg, Christian A., 29 W. 34th st.
 Gundlach, Brutus, 47 W. 34th st.
 Gurd, John A., 597 5th av.
 Haenke, J. Martyn, 15 Broad st.
 Hamlin, Prof. A. D. F., 105 Morningside av.
 Hanemann, John Theo., 475 5th av.
 Harde & Hasselman, 331 Madison av.
 Hardenbergh, Henry J., 47 W. 34th st.
 Harder, Julius, 120 W. 32d st.
 Hardway, George J., 22 E. 33d st.
 Harmon, Arthur Loomis, 3 W. 29th st.
 Harney, G. E., 320 5th av.
 Harrison, Joseph Duke, 52 Vanderbilt av.
 Harrison, M. Jos., 61 Park Row.
 Hart, Donald P., 3 W. 29th st.
 Hatton, John M., 597 5th av.
 Hauser, John, 13 Manhattan st.
 Hausle, Frank, 81 E. 125th st.
 Hays & Hoadley, 2010 Broadway.
 Hedman, Axel S., 112 E. 19th st.
 Heidelberg, Max G., 17 W. 38th st.
 Hering & Fitch, 8 W. 33d st.
 Herts, Henry B., 665 5th av.
 Hewitt & Bottomley, 597 5th av.
 Hewlett, William A., 1265 Broadway.
 Higgins, Chas. M., 165 Broadway.
 Higginson, Wm., 13 Park Row.
 Hill, Fred P., 299 Madison av.
 Hiss & Weekes, 452 5th av.
 Hoddick, A. O., 117 W. 58th st.
 Hoffman, F. Burrall, Jr., 15 E. 40th st.
 Hof, George, Jr., 371 E. 158th st., Bronx.
 Holabird & Roche, 2 W. 47th st.
 Holden, Frank A., 485 5th av.
 Holden, Lansing C., 103 Park av.
 Holler, John H., Jr., 82 Wall st.
 Hollingsworth & Bragdon, 9 E. 40th st.
 Holmes & Winslow, 110 W. 40th st.
 Holt, Charles L., 150 Nassau st.
 Hood, Raymond M., 7 W. 42d st.
 Hooper, Parker Morse, 15 W. 38th st.
 Hopkins, Alfred, 101 Park av.
 Hoppin & Koen, 4 E. 43d st.
 Horenburger & Bardes, 122 Bowery.
 Horenburger, Anthony W. H., 1254 Franklin av., Bronx.
 Horenburger, Herrmann, & Son, 656 E. 163d st., Bronx.
 Horn, E. C., Sons, 1476 Broadway.
 Hornum, Louis A., 405 Lexington av.
 Howell, Harry T., 3d av. and E. 149th st.
 Howells, John Mead, 470 4th av.
 Howells & Stokes, 100 William st.
 Howes, E. T., 503 5th av.
 Howland, Henry R., 103 Park av.
 Hughes, Elwood, 210 W. 34th st.
 Hume, Raphael, 2 W. 47th st.
 Hunt, F. Albert, 52 Vanderbilt av.
 Hunt, Franklin J., 115 W. 84th st.
 Hunt & Hunt, 28 E. 21st st.
 Hunter, Paul C., 191 9th av.
 Hurwitz, Harry, 230 Grand st.
 Hutchinson, Robt. C., 126 Liberty st.
 Hutton & Buys, 103 Park av.
 Ingalls, Harry Creighton, 15 E. 40th st.
 Ingle, John W., 527 5th av.
 Jackson, Arthur C., 25 Madison av.
 Jackson, Jos. A., 1123 Broadway.
 Jackson, Walter H., 320 5th av.
 Jacobs, Harry Allen, 320 5th av.
 Jaeger, Fredk., 1775 Weeks av., Bronx.
 Jallade, Louis E., 37 Liberty st.
 Janes, Elisha Harris, 414 Madison av.
 Jardine, Hill & Murdock, 50 E. 42d st.
 Joanness, Francis Y., 52 Vanderbilt av.
 Johnson, Arland W., 507 5th av.
 Johnson, Carl P., 30 E. 42d st.
 Jones, Chas. Granville, 280 Broadway.
 Josselyn, Edgar A., 70 E. 45th st.
 Katz, Samuel, 405 Lexington av.
 Katz & Feiner, 505 5th av.
 Kaufmann, Kilian & White, 110 E. 23d st.
 Kehoc, Alfred L., & Co., 1 Beekman st.
 Keimig, L. J., 299 Madison av.
 Keister, George, 56 W. 45th st.
 Kelley, Frederic P., 437 5th av.
 Kellogg, Fay, Miss, 32 Union sq.
 Kimball & Roose, 71 Broadway.
 King, Beverly S., 103 Park av.
 Kintzing, Lester, Grand Cent. T. Bldg.
 Kirby, Walter B., 527 5th av.
 Klaber, Eugene Henry, 101 Park av.
 Klaber, John J., 21 W. 39th st.
 Knapp, Horace Greeley, 235 Fulton st.
 Knoche, G., 516 E. 72d st.
 Knowles, H. P., 52 Vanderbilt av.
 Knowles, Wm. W., 37 W. 39th st.
 Knowles & Bassoe, 280 Madison av.
 Knubel, John H., 305 W. 43d st.
 Koch, W. Tilden, 3131 Hull av., Bronx.
 Koehler, Victor Hugo, 2 Columbus Circle.
 Koelble, Henry A., 114 E. 28th st.
 Koenig, Adolph G., 405 Lexington av.
 Koeshl, Otto, 15 E. 40th st.
 Kohn, Robert D., 56 W. 45th st.
 Koppe, Wm., 830 Westchester av., Bronx.
 Kramer, George W., & Son, 1 Madison av.
 Krapp, Herbert J., 114 E. 16th st.
 Kreymborg, Arch. T. L. Co., 163d st. and S. Boulevard.
 Kurtzer, Wm., 1753 Boston rd., Bronx.
 La Farge, C. Grant, 101 Park av.
 Lamb, Thomas W., 644 8th av.
 Landsman & Bartos, Bowery Bank Bldg.
 Lang, Eugene J., 477 5th av.
 Langer, Nathan, 81 E. 125th st.
 Lawlor, John J., 207 W. 34th st.
 Lawlor & Haase, 69 Wall st.
 Lawrence, Warrington G., 225 5th av.
 Lee & Hewitt, 1123 Broadway.
 Lehlbach, Ed., 507 5th av.
 Leining, Lewis, Jr., 289 4th av.
 Leo, John P., 770 St. Nicholas av.
 Leonard, G. Francis, 5 Beekman st.
 Levingson, Samuel, 101 Park av.
 Levitan, Benj. W., 10 E. 38th st.
 Levy, Emilio, 331 Madison av.
 Lindeberg, H. T., 2 W. 47th st.
 Lindsay, Andrew, 37 Liberty st.
 Lippert, F. G., 62 W. 45th st.
 Litchfield, Electus D., 477 5th av.
 Little & O'Connor, 103 Park av.
 Lobo, Arthur, 105 W. 40th st.
 Lord & Hewlett, 345 5th av.
 Lovell, Clinton P., 30 E. 42d st.
 Lowell, Guy, 225 5th av.
 Lowinson, Oscar, 366 5th av.
 Ludlow & Peabody, 101 Park av.

- Lyall, Earl H., 437 5th av.
 Lynch, Eliot, 341 5th av.
 Lyons, Robert T., 52 Vanderbilt av.
 McCabe, Frank J., 303 5th av.
 McCabe, George M., 96 5th av.
 McCrea, Archibald M., 149 Broadway.
 McCrea, A. Wallace, 101 Park av.
 McElfatrick, W. H., 701 7th av.
 McGlashan, Norman, 1123 Broadway.
 McGuire, Jos. H., 103 Park av.
 McGuire, Milton H., 101 Park av.
 McKee, Robert T., 59 W. 56th st.
 McKenzie, Vorhees & Gmelin, 1123 Broadway.
 McKim, Mead & White, 101 Park av.
 Mackintosh, Alex., 55 Bible House.
 MacManus, A. J., 3 W. 29th st.
 Magonigle, H. Van Buren, 101 Park av.
 Maher, James S., 431 W. 14th st.
 Mainzer, Herbert R., 105 W. 40th st.
 Major, Howard, 599 5th av.
 Mann & MacNeille, 70 E. 45th st.
 Marcus, Bertram N., 347 5th av.
 Marsh, A. L. C., 46 Cedar st.
 Marshall, Henry Rutgers, 3 W. 29th st.
 Massarene, Wm. G., 15 E. 40th st.
 Mathews, Chas. T., 624 Madison av.
 Maynicke & Francke, 25 E. 26th st.
 Meader, Herman Lee, 2 W. 33d st.
 Megirian, John, 38 W. 32d st.
 Mellen & Walker, 101 Park av.
 Mellon, E. P., 52 Vanderbilt av.
 Mersereau, Wm. H., 32 Broadway.
 Mertin, Adolph, 34 W. 28th st.
 Metcalf, Louis R., 2 W. 47th st.
 Metzger, George C., 18 E. 41st st.
 Meyer, Theo. A., 114 E. 28th st.
 Meyers, Chas. B., 1 Union sq. West.
 Miller, William P., 303 W. 74th st.
 Mills, James L., 597 5th av.
 Mizner, Addison, 431 5th av.
 Moeller, Edgar J., 103 Park av.
 Montgomery, H. P. A., 105 W. 40th st.
 Moore & Landseid, 3d av. & 148th st.
 Moore, Frank Ashburton, 52 Vanderbilt av.
 Moore, W. Stanley, 52 Vanderbilt av.
 Moran, Wm. E., 15 W. 38th st.
 Morgan, Clarence M., 529 Courtland av.,
 Bronx.
 Morgan, Jay H., 331 Madison av.
 Morris, Benj. Wistar, 101 Park av.
 Morris, Charles, 16 E. 23d st.
 Morse, Henry G., 101 Park av.
 Mortensen & Co., 405 Lexington av.
 Moses, Lionel, 2d, 101 Park av.
 Mowbray & Uffinger, 56 Liberty st.
 Muller, Barnhardt E., 477 5th av.
 Muller, Max, 115 Nassau st.
 Mulliken, Harry B., 103 Park av.
 Mullin, C. Whitley, 507 5th av.
 Murchison, Kenneth M., 101 Park av.
 Murgatroyd, Everett F., 2764 Morris av.,
 Bronx.
 Murphy & Dana, 331 Madison av.
 Myers, Nathan, 233 Broadway.
 Nash, Arthur C., 345 5th av.
 Nash, Thomas, 52 Vanderbilt av.
 Nast, Adolph E., 546 5th av.
 Necarsulmer, Edw., 507 5th av.
 Nelson & Van Wagenen, 15 W. 38th st.
 Neville & Bagge, 105 W. 40th st.
 Newman & Harris, 1123 Broadway.
 Nitchie, John E., 63 Park Row.
 Nolan, John F., 124 W. 36th st.
 Nordheim, George, 132 E. 23d st.
 Nordheim, Henry, 1087 Tremont av., Bronx.
 O'Connor, James W., 3 W. 29th st.
 Orchard, W. H., 9 E. 40th st.
 Otto, Carl L., 15 Park Row.
 Pallme, Edward F., 3 W. 29th st.
 Palmer & Hornbostel, 63 William st.
 Parfitt, Albert E., 233 Broadway.
 Parish & Schroeder, 280 Madison av.
 Parsons, Floyd Y., 1133 Broadway.
 Parsons, Robert E., 28 E. 49th st.
 Patterson, Chester A., 15 E. 40th st.
 Pauli, A. C., 331 Madison av.
 Peabody, Wilson & Brown, 389 5th av.
 Peck, Chas. F., 7 E. 42d st.
 Peck, Laurence F., 599 5th av.
 Peker, C. G., 345 5th av.
 Pelham, George Fred, 30 E. 42d st.
 Pell, F. Livingston, 122 E. 25th st.
 Pelton, Henry C., 35 W. 39th st.
 Perkins, Frank E., 225 5th av.
 Petit, John J., 103 Park av.
 Phelps, Stowe, 20 W. 43d st.
 Phillipps, R. Stenner, 233 W. 33d st.
 Phillips, Alex., 160 5th av.
 Phillips, J. H., 681 5th av.
 Phillips, W. Stanwood, 103 Park av.
 Pilcher & Tachau, 109 Lexington av.
 Pisciotta, Lucian, 391 E. Tremont av., Bronx.
 Pittman, Henry C., 114 Liberty st.
 Platt, Chas. A., 101 Park av.
 Platt, Fredk. Putnam, 1123 Broadway.
 Pollard, Geo. Mort., 347 5th av.
 Poole, Thomas H., & Co., 13 W. 30th st.
 Pope, John Russell, 527 5th av.
 Post, Geo. B., & Sons, 101 Park av.
 Potter, Howard Nott, 35 E. 30th st.
 Potter, Wilson, 3 Union sq.
 Prager, Raphael, 37 Liberty st.
 Pratt, Carroll H., 103 Park av.
 Prescott & Scott, 1 Madison av.
 Prochazka, Ferdinand, 1 Madison av.
 Provot, George, 104 W. 42d st.
 Purdy, W. S., 320 5th av.
 Putzel, Joseph, 29 W. 34th st.
 Quinby, Frank H., 99 Nassau st.
 Rasmussen & Wayland, 1133 Broadway.
 Regelmann, Henry, 133 7th st.
 Reiley, Robt. J., 477 5th av.
 Reissman, Otto, 147 4th av.
 Renwick, Aspinwall & Tucker, 8 W. 40th st.
 Renwick, Wm. W., 38 W. 32d st.
 Rice, Oran W., 4 W. 40th st.
 Rich & Mathesius, 320 5th av.
 Richter, Chas. H., 68 Broad st.
 Roberston, T. Markoe, 331 Madison av.
 Robinson, F. Delancey, 1123 Broadway.
 Robinson, F. L., 50 E. 42d st.
 Rocker & Vate, 15 E. 40th st.
 Rogers, Jas. Gamble, 470 4th av.
 Rogers, Pliny, 50 E. 42d st.
 Rogers, William J., 437 5th av.
 Rohl, Richard, 42 E. 23d st.
 Romeyn, Chas. W., 55 Broadway.
 Rooke, Frank A., 15 E. 48th st.
 Rose, Charles F., 110 W. 40th st.
 Ross & McNeil, 39 E. 42d st.
 Rossiter & Muller, 15 W. 38th st.

- Roth, Emery, 119 W. 40th st.
 Rouse & Goldstone, 512 5th av.
 Rousseau, Francis X., 2 E. 23d st.
 Rowe & Smith, 1123 Broadway.
 Russell & Horn, 25 W. 42d st.
 Santangelo, Louis B., 2471 8th av.
 Sass, Samuel, 32 Union sq.
 Satterlee & Boyd, 3 W. 29th st.
 Satterthwaite, Pennington, 345 5th av.
 Savignano, Ferd., 18 E. 41st st.
 Schaefer, Charles, Jr., 784 E. 179th st.
 Schaeffler, Jos. C., & Co., 38 W. 32d st.
 Scharsmith, John E., 523 W. 146th st.
 Schefcik, Frank J., 4168 Park av.
 Scheier, John H., 25 W. 42d st.
 Schenck & Mead, 105 W. 40th st.
 Schmidt, Mott B., 15 E. 40th st.
 Schmitt, A. F. A., 604 Courtland av., Bronx.
 Schoen, Eugene J., 106 E. 19th st.
 Schubert, Constantine, 366 5th av.
 Schumann, Charles H., 280 Broadway.
 Schwartz, Morris, 190 Bowery.
 Schwartz & Gross, 347 5th av.
 Scopes & Feustmann, 15 W. 38th st.
 See, Milton, & Son, 15 E. 40th st.
 Sefert, Clarence L., 2010 Broadway.
 Seifert, Karl F. J., 30 E. 42d st.
 Serracino, N., 507 5th av.
 Severance & Van Alen, 4 W. 37th st.
 Seymour & Schonewald, Grand Cent. Ter. Bldg.
 Shape, Bready & Peterkin, 220 W. 42d st.
 Sheinart, Louis A., 194 Bowery.
 Shepard, A. D., 36 E. 23d st.
 Shire, Edward I., 373 4th av.
 Silkworth, Chas. E., Jr., 258 Broadway.
 Simonson, B. Hustace, 315 5th av.
 Slayter, Charles Keeler, 40 E. 53d st.
 Slocum, S. Gifford, 101 Park av.
 Small, Franklin M., 265 Broadway.
 Smith, Bowen Bancroft, 104 W. 42d st.
 Smith, H. Atterbury, 303 W. 74th st.
 Smith, Harold P., 38 W. 32d st.
 Smith, Lucien E., 2 W. 47th st.
 Smith, Wm. Douglas, 52 Vanderbilt av.
 Smith, Wm. Neill, 101 Park av.
 Smith, Wm. W., 82 Wall st.
 Smith & Ross, 15 E. 40th st.
 Sneden, A. Durant, 149 Broadway.
 Snook, J. B., & Sons, 261 Broadway.
 Snyder, C. B. J., 500 Park av.
 Soldwedel & Tatton, 45 E. 57th st.
 Somerville, Wm. L., 331 Madison av.
 Sommerfeld & Steckler, 31 Union sq.
 Spannake, Otto L., 13 Park Row.
 Springsteen, Geo. W., Jr., 32 Union sq.
 Stammers, S. J., 320 5th av.
 Starrett & Van Vleck, 8 W. 40th st.
 Stegmayer, Chas., 168 E. 91st st.
 Steinbach, Gustave E., 15 E. 40th st.
 Stephenson & Wheeler, 2 W. 45th st.
 Stern, B. E., 56 W. 45th st.
 Sterner, Frederick J., 150 E. 62d st.
 Stillman, Michael, 124 E. 25th st.
 Stockton, Louis L., 35 W. 39th st.
 Stoddard, W. L., 9 E. 40th st.
 Stone, Fredk. S., 55 Broadway.
 Stoughton & Stoughton, 96 5th av.
 Strack, Otto, 220 E. 23d st.
 Straub, Chas. M., 147 4th av.
 Streeton, Geo. H., 31 E. 27th st.
 Strong, Mason R., 7 Wall st.
 Struthers, Robert, 13 W. 30th st.
 Summerville, F. M., 175 5th av.
 Swasey, Wm. Albert, 47 W. 34th st.
 Taggart, S. A., Municipal Bldg.
 Tallant, Hugh, 507 5th av.
 Tandy, Vertner W., 1931 Broadway.
 Taylor, Alfred H., 138 W. 65th st.
 Taylor & Levi, 105 W. 40th st.
 Taylor & Mosely, 40 Wall st.
 Teale, Oscar S., 240 Broadway.
 Teichman, Robt., 10 Hanover sq.
 Terwilliger, D. W., 1 W. 34th st.
 Thinnies, J., Jr., 299 Madison av.
 Thomas, Andrew J., 137 E. 45th st.
 Thompson, Wm. S., 381 4th av.
 Tiemeyer, John H., 17 W. 44th st.
 Tillack, J. L., 150 Nassau st.
 Tooker & Marsh, 101 Park av.
 Townner, Wm. T., 100 Morningside dr.
 Townsend, Steidle & Haskell, 1328 Broadway.
 Townsend, F. E., 280 Madison av.
 Tracy & Swartwout, 18 W. 34th st.
 Trowbridge & Ackerman, 25 W. 44th st.
 Trowbridge & Livingston, 527 5th av.
 True, Clarence, & Son, Lexington av. and 42d st.
 Truex, Fred M., 1170 Broadway.
 Tryon, Thomas, 70 E. 45th st.
 Tubby, W. B., & Son, 81 Fulton st.
 Tuthill, William B., 105 E. 22d st.
 Tuttle, Bloodgood, 44 W. 34th st.
 Tuttle, Harry W., 437 5th av.
 Upjohn, Hobart B., 456 4th av.
 Upton, H. Desmond, 381 4th av.
 Valentine & Kissam, 25 Madison av.
 Varian Brothers, 400 Oliver pl., Bronx.
 Van Auker, George H., 1265 Broadway.
 Van Pelt, John V., 381 4th av.
 Very, S. R. T., Grand Central Terminal.
 Visscher, Theo., 299 Madison av.
 Voekler, John Philip, 979 3d av.
 Volckening, Walter H., 82 Wall st.
 Vollmer & Beersman, 18 W. 34th st.
 Volz, Charles, 2 W. 45th st.
 Wagner, Steward, 7 E. 42d st.
 Waid, D. Everett, 1 Madison av.
 Walker, Hobart A., 437 5th av.
 Walker & Ward, 52 Vanderbilt av.
 Walker, W. Leslie, 103 Park av.
 Walker & Gillette, 128 E. 37th st.
 Wallach, J. B., 280 Madison av.
 Wallis & Goodwillie, 56 W. 45th st.
 Walther, Bart & John P., 147 E. 125th st.
 Wandke, Walther G., 331 W. 14th st.
 Ward, Frank F., 203 Broadway.
 Ware, Franklin B. & Arthur, 1170 Broadway.
 Warren, Charles P., Columbia Univer.
 Warren & Clark, 108 E. 29th st.
 Warren & Wetmore, 16 E. 47th st.
 Washburn, E. F., 101 Park av.
 Watson, John C., 271 W. 125th st.
 Webb, Gregory B., 104 W. 42d st.
 Wehrlin, Edward, 309 Broadway.
 Weiher, Lorenz F. J., 271 W. 125th st.
 Weiser, Arthur, 271 W. 125th st.
 Welch, Alex. McMillan, 101 Park av.
 Wells, Geo. H., 10 E. 43d st.
 Werner & Windolph, 25 W. 33d st.
 Westervelt, J. C., 36 W. 34th st.
 Whinston, Benj. H., 507 Willis av.

Whitfield, Henry D., 160 5th av.
 Whitehead, Russell F., 132 Madison av.
 Whiting, Frank P., 103 Park av.
 Whiton, Aug. S., 101 Park av.
 Wilbur, Edwin, 562 W. 164th st.
 Wilder & White, 50 Church st.
 Wilkinson, Henry W., 15 W. 38th st.
 Williams, Ellwood, 500 5th av.
 Williams, Walter, 303 5th av.
 Witt, Ferdinand, 569 5th av.
 Wood, A. W. B., 103 Park av.
 Wood, George E., 103 Park av.
 Wortmann & Braun, 114 E. 28th st.
 Wright, Frank A., 110 E. 23d st.
 Wulff, Charles A., 340 Madison av.
 York & Sawyer, 50 E. 41st st.
 Yost, J. W., 105 W. 40th st.
 Young, Edward Lee, 118 E. 28th st.
 Young, Harold, 32 Union sq.
 Young, William E., 1931 Broadway.
 Zipkes, Maximilian, 405 Lexington av.
 Zobel, Frederick C., 35 W. 39th st.

BROOKLYN.

Adams, Frank, 216 Boerum st.
 Adelsohn, Edward M., 1776 Pitkin av.
 Allmendinger, L., 20 Palmetto st.
 Bauer, Christian, Jr., 801 Manhattan av.
 Bennett, Thos., 7826 5th av.
 Berger, Louis, & Co., 1652 Myrtle av.
 Berlenbach, F. J., 260 Graham av.
 Bly & Hamann, 833 St. Johns pl.
 Braun, Chas., 459 41st st.
 Brook, Abraham, 215 Montague st.
 Burke, John, 372 Union st.
 Cannella, Chas. P., 1163 Herkimer st.
 Cantor, M. A., 373 Fulton st.
 Caplan, Philip, 16 Court st.
 Carlson & Wiseman, 226 Henry st.
 Chestresmith, E. B., 181 Woodruff av.
 Cobb, Ethel M., 166 Montague st.
 Cohn Bros., 361 Stone av.
 Cohn, Max, 189 Grand st.
 Conway, W. J., 400 Union st.
 Dangler, Harold G., 215 Montague st.
 Dassau, Fredk., 1373 Broadway.
 Debus, William, 86 Cedar st.
 De Lion, Carl H., 200 Montague st.
 Dennis, Ernest, 241 Schenck av.
 Devoe, Harry M., 131 Livingston st.
 Dorfman, B. W., 26 Court st.
 Dreyer, John G., 75 Oakland st.
 Driesler, Benj., 153 Remsen st.
 Eisenla, Fred W., 650 68th st.
 Engelhardt, Th., 905 Broadway.
 Entlich, Henry M., 432 S. 5th st.
 Erda, Gustave, 826 Manhattan av.
 Erickson, E. J., 5418 5th av.
 Farber, Abraham, 1746 Pitkin av.
 Finkensieper, Benj., 346 Vernon av.
 Fischer, Adam E., 373 Fulton st.
 Foot, M. D., Mrs., 1432 75th st.
 Frank, Lawrence J., Jr., 206 Crescent st.
 Gagliardi, P., 239 Navy st.
 Gastmeyer, Charles, 1652 Myrtle av.
 Gens, Charles, Jr., 1015 E. 2d st.
 Glover, J. G., 222 Navy st.
 Goldstone, Tobias, 50 Graham av.
 Harrington, Henry G., 426 57th st.
 Harrington, W. H., 510 57th st.

Hartung, Joseph W., 548 2d st.
 Hclmle & Corbett, 190 Montague st.
 Heps, Henri C., 358 New York av.
 Hine, Fredk. L., 189 Montague st.
 Hirsch, Max, 215 Montague st.
 Holder, Henry, Jr., 242 Franklin av.
 Holmgren, Eric O., 371 Fulton st.
 Hudson, Benj. F., 319 9th st.
 Infanger, Chas., & Son, 2634 Atlantic av.
 Kennedy, J. Sarsfield, 157 Remsen st.
 Koch & Wagner, 26 Court st.
 Koen, Lew, 607 Van Sicklen av.
 Laspia & Salvati, 525 Grand st.
 Leibig, O. E., 227 Hamburg av.
 Lobenstein, Geo. J., 230 Martense st.
 Lucas, David A., 98 3d st.
 Ludwig, Wm. H., 801 Eastern P'kway.
 Madigan, G. Harry, 243 Withers st.
 Martiri, Angelo H., 6005 14th av.
 McCarthy, W. T., 16 Court st.
 McDonald, James A., 1630 Surf av.
 McKillop, Jas. E., 154 India st.
 Meisinger, Emil J., 394 Graham av.
 Michel, John G., 323 45th st.
 Millman, S., & Son, 26 Court st.
 Nurick, H. J., 955 Broadway.
 Parfitt Bros., 26 Court st.
 Pierce, A. White, 26 Court st.
 Purdy, Raymond Jones, 167 76th st.
 Rucker, Harry, 9004 5th av.
 Rosenberg, Michael, 215 Montague st.
 Samenfeld, Lee, 860 Hancock st.
 Savignano, Ferdinand, 6005 14th av.
 Schaeffer, Robert T., 1526 Flatbush av.
 Shampian & Shampian, 772 Broadway.
 Simpson, John, 430 48th st.
 Skrzynecki, Gustave A., 93 Hicks st.
 Slee & Bryson, 154 Montague st.
 Ullrich, Albert, & Son, 373 Fulton st.
 Vernam, Harold D., 1547 Brooklyn av.
 Vollweiler, Henry, 696 Bushwick av.
 Voss & Lauritzen, 65 De Kalb av.
 Wandell, John C., Co., 8525 4th av.
 Werner, Chas., 316 Flatbush av.
 Whinston, Morris, 459 Stone av.
 Wills, Walter B., 1181 Myrtle av.
 Winters, Wm. C., 106 Van Sicklen av.

RICHMOND.

Archibald, R. G., New Dorp.
 Brick, Saml. R., Jr., Borough Hall, St. George.
 Comtois, Henry M., 233 Jersey st., New Brighton.
 Hewecker, Chas. B., 11 1st ave., Tompkinsville.
 Loeffler, Otto, Water st., Stapleton.
 Otto, H. G., 6 Jackson av., Stapleton.
 Pelcher, Harry W., Nat'l Bank Bldg., Port Richmond.
 Whitford, James, St. George.
 Winans, John, 117 Pelton av., West New Brighton.

QUEENS.

COLLEGE POINT.

Fehn, Sidney M., 607 6th av.
 McCracken, E. Leo., Manhattan Court.
 Morris, Harry T., Jr., 212 13th st.

CORONA.

Di Blasi, Alfred, 94 E. Jackson av.
Johnson, Robert W., 60 Hunt av.
McIntyre, Wm., 105 W. Jackson av.
Schneider, E., 29 Alburtis av.
Schoeller, A., 23 Way av.
Varrone, Crescent L., 166 Corona av.

ELMHURST.

Hendry, Charles, 70 Baxter av.
Rosc, Edw., Grand st.

FAR ROCKAWAY.

Bogart, Albert J.
Cornell, Jos. H., Mott av.
Smith, Harvcy N., Chandler av.
Smith, Morell, Bank Bldg.

FLUSHING.

Collins, Frank H., 69 Broadway.
Richardson, A. Edw., 100 Amity st.

JAMAICA.

Danacher, Louis, 12 Washington st.
Finn, Wm. A., 229 New York av.
Jeffrey, H. S., Jr., Butler Bldg.
Kirby, I. M., 363 Fulton st.
Liebau, Hans, P. O. Bldg.
Spaulding, W. H., 34 Bergen av.
Thomas, Otto, 354 Fulton st.
Thompson, Albert, Jamaica Estates.
Vandervoeght, J. H., 319 Fulton st.
Van Deusen, C. R., Fulton st., Hollis.
Weigand, Herbert O., Forest Hills.

LONG ISLAND CITY.

Anstey, A. D., 1 Bridge Plaza.
Baker, John M., 9 Jackson av.
Berger, Jacob F., 349 13th av.
Boese & Suter, Queens Plaza Court Bldg.

Braun, Frank, 585 9th av.
Chmelik, Frank, 796 2d av.
Hahn, Edward, Bridge Plaza.
Hewitt, Chas. W., 604 Academy st.
Korfman, F. W., 406 9th av.
Schiller, Valentin, 391 10th av.
Worrall, W. S., Jr., Bridge Plaza.

RICHMOND HILL.

Crane, George E., 615 Stoothoff av.
Dean, Harry, 1035 Curtis av.
Haugaard, Henry E., 16 Waterbury av.

ROCKAWAY BEACH.

Smith, Jas. B., 404 Boulevard.

WOODHAVEN.

Georgi, Edwin C., 4185 Fulton st.
Ross, Chas. W., 347 Benedict av.
Schauli, B., 1556 Oakley av.

LONG ISLAND.

Baylis, I. B., Hempstead.
Bishop, Leonard L., West Hampton Beach.
Blum, Edward H., Riverhead.
Briggs, Frederick H., Planedome.
Bungart, Paul J., Rockville Centre.
Conklin, Claude C., Patchogue.
Corwin, Wm. H., Brightwaters.
Cromwell, J. J., Woodmere.
Dumper, Henry A., Amityville.
Green, Isaac H., Sayville.
Hart, Charles M., Bayshore.
Hausman, N. W., Glen Cove.
Inglee, Lewis, Amityville.
Kern, C. E., 55 East av., Freeport.
Ketcham, A. T., Cedarhurst.
Laurence, J. Custis, East Hampton.
Mumford, G. S., Garden City Estates.
Skidmore, George H., Riverhead.
Welch, Carroll, Huntington.

ARCHITECTS IN NEW YORK STATE

ADAMS.

Greene, O. De Grasse.....

ALBANY.

Brainard, C. H.....456 Delaware av.
Brownell, C. H.....362 Second av.
Callbeck, P. H.....24 James st.
Collins, F.....779 Livingston av.
Corwith, Fred E.....696 Hudson av.
Cosgrove, John J.....17 Spring st.
Delahanty, A. L.....61 State st.
Douglas, D. Stuart.....100 State st.
Emery, M. L. & H. G.....42 N. Pearl st.
Fuller & Robinson.....95 State st.
Gleason, T. L.....45 Maiden Lane
Hall, A. Edson.....Educational Dept.
Heidrich, Charles.....Empire Theatre bldg.
Hogan, F. V. A.....395 Morris st.
Koonz, John H.....274 Hamilton st.
Lape, John F.....36 State st.
Loth & White.....130 State st.
MacPherson, R. D.....121 N. Pearl st.
Merrick, Chas. V.....51 State st.
Obenaus, Nichols Co.....119 State st.
Ogden & Gander.....61 State st.
Pember & Campaigne.....24 James st.
Pilcher, L. F.....Capitol
Reynolds, Marcus T.....100 State st.
Richardson, E. W.....109 N. Allen st.
Rogers, Howard.....463 Broadway
Ryder, John M.....627 Clinton av.
Schade, Wm. C.....24 De Graaf bldg.
Selkirk, Alexander.....133 N. Pearl st.
Shattuck, Jas. S.....82 N. Pearl st.
Shoemaker, J. D.....24 James st.
Sussdorf, Chas. A.....100 State st.
Van Guysling, W. H.....1 Clinton sq.

ALTAMONT.

Wright, Wheeler.....Euclid av.

AMSTERDAM.

Cassidy, David D.....80 E. Main st.
Daly, Howard F.....7 E. Main st.
Underwood, Charles M.....Main st.

AUBURN.

Armstrong, F. H.....Seward bldg.
Hilge, Samuel E.....Seward bldg.
Tallman, C. C.....17 Dill st.

BATAVIA.

Homelius & Son, H. W.....2 Main st.

BATH.

Fogarty, Thomas.....

BEACON.

Van Slyck, Charles B.....

BERGEN.

De Long, Samuel R.....

BINGHAMTON.

Dickerman, Edwin W.....Peoples Trust bldg.
Gardner, S. Sumner.....505 Ackerman bldg.
Lacey & Schenck.....474 Phelps bldg.
Lecy & Son, T. I.....1110 Kilmer bldg.
Mather, Norton I.....20 Court st.
Tiffany & Conrad.....515 Phelps Bank bldg.
Todaro, Vincent S.....Perry bldg.
Tupper, G. Edmund.....601 Press bldg.
Vosbury, C. Edward.....Savings Bank bldg.
Whitlock, W. H.....602 Security Mutual bldg.

BREWSTER.

Waite, T.....Oak st.

BUFFALO.

Bacon, Edwin P.....407 W. Delavan av.
Beck, Howard L.....12 Municipal bldg.
Bellony, Alexander M.....537 Woodlawn av.
Beierl, Max G.....405 Ger. Amer. Bank bldg.
Berry, Stephen R.....345 Brackenridge st.
Bethune & Fuchs.....215 Franklin st.

Brickell, W. S.....46 Chapin blk.
Brown, Joseph A.....778 Genesec st.
Cary, George.....184 Delaware av.
Chappelle, Frank H.....750 Elmwood av.
Colson & Hudson.....34 Dun bldg.
Coxhead, John H.....924 Ellicott sq.
Dell, Emerson C.....65 Monticello av.
Dietel, George C.....795 Humboldt Parkway
Eckel, L. P. J.....191 York st.
Esenwein & Johnson.....781 Ellicott sq.
Fayfield, Robert C.....711 Iroquois bldg.
Fenton, Gibson H.....120 Whitney pl.
Francis, Wm. C.....18 Oakland pl.
Fuchs, William L.....210 Franklin st.
Gagnagel, Jacob A.....149 Kingsley st.
Geiggand, Joseph J.....346 Herman st.
Goldstein, Eli W.....47 Niagara st.
Green & Wicks.....110 Franklin st.
Harris & Merritt.....800 Erie County Bank bldg.
Hausauer, Jacob S.....92 Wallace av.
Henrich, Edward G.....711 Mutual Life bldg.
Holland, H. Osgood.....1009 Mutual Life bldg.
Hopkins, Albert Hart.....Berman Ins. bldg.
Joralemon, E. E.....547 Franklin st.
Kehr, H. P.....2620 Main st.
Kidd, F. J.....110 Franklin st.
Lamphere, Walter.....Iroquois bldg.
Lansing, Bley & Lyman.....712 Prudential bldg.
Little, H. H.....56 Norwood av.
Mann & Cook.....Dun bldg.
Mathewson, F. S.....52 Niagara st.
Metzger, Edw.....1677 Amherst st.
Metzger, George J.....19 W. Huron st.
Miller, Martin C.....611 Mutual Life bldg.
Moeller, Eruard H.....394 Pearl st.
Mohr, Fredk. C. H.....265 E. Utica st.
Mott, Charles.....1330 Prudential bldg.
North, Robert.....808 Niagara bldg.
Oberkircher, Jacob Hopkins.....46 Orange st.
Orr, Ulysses G.....66 Builders' Exchange
Paul, Emil C.....808 Main st.
Porter, Cyrus K., & Sons.....73 W. Eagle st.
Post, Albert A.....435 Brisbane bldg.
Reidpath, R. J., & Son.....64 Builders' Exchange
Schmill, Carl, & Son.....Prudential bldg.
Schultz, Julius C.....1370 Main st.
Schurman, F. M.....18 Maple st.
Seiner, John G.....76 Thompson st.
Seter, George.....33 Burch av.
Spann, Henry L.....38 Passcal st.
Walker, James.....77 Builders' Exchange
Wallace, Robert A.....51 Builders' Exchange
Wannenwetsch, C. H. A., & Co.....563 William st.
Wettstein, Charles.....48 A st.
Williams, Owens J.....25 Perkins st.
Wolfe, G. Morton.....1377 Main st.
Wood & Bradney.....614 Mutual Life bldg.
Zawadski, W. H.....798 Fillmore av.

CARTHAGE.

Brownell, J. P.....
Phillips, J. L.....

CASTLETON.

Montross, J. Walter.....

CATSKILL.

Beardsley, Charles.....37 Clark st.
Warner, George H.....438 Main st.

CATTARAUGUS.

Setter Bros. Co.....

CAZENOVIA.

Van Duzer, I. V.....

CENTRAL SQUARE.

Smith, D. W.....

CHERRY CREEK.

Smith, F.....

COHOES.

Galvin, James A.....28 Van Derwenken av.
Goddard, Wm. M.....Carter bldg.
Hopkins & Grattan.....116 Remsen st.

CORNING.

Tuthill, S. E.....47 E. Market st.

DANSVILLE.

Alex, Peter.....

DEPEW.

Glade, John C.....Depew st.

ELMIRA.

Considine & Haskell.....612 Hallett bldg.
Dockstader, Otis, & Son.....101-105 W. Church st.
Ingham & Veazie.....114 Baldwin st.
Pierce & Bickford.....120 Lake st.

FREDONIA.

Beebe, H. P.....266 Central av.

GENEVA.

Adams, Lloyd Philo.....11 Masonic Temple

GLENS FALLS.

Lawrence, W. E.....116 Crandall st.
Potter, E. B.....116 Glen st.
Rheinlander, R. H.....5 Berry st.
Scales, William J.....Insurance bldg.
Shippey, W. G.....61 Crandall st.

GLOVERSVILLE.

Comstock & Van Duser.....31 W. Fulton st.
Moul, Henry S.....24 N. Main st.

GOUVERNEUR.

Stacy, George W.....

HASTINGS.

Hastings, F. L.....Ridgefield pl.
Kintzing, Lester.....

HERKIMER.

Cassidy, S. W.....Herkimer Nat. Bank bldg.
Slyter, R. E.....Grange Temple

HUDSON.

De Prose, Victor A.....Carroll st.
Mcui, Henry S.....443 Warren st.
O'Connor, Michael.....445 E. Allen st.

ITHACA.

Gibb & Waltz.....110 N. Tioga st.
Hinckley, H. N.....Savings Bank bldg.
Martin, Prof. C. A.....Cornell University
Miller, William H.....139 E. State st.
Vivian, Clinton L.....120 E. Main st.
Wilgus, John M.....State and Cayuga sts.
Young, George, Jr.....Cornell University

JAMESTOWN.

Freeburg & Fidler.....313 Chadakoin bldg.
Hultgren, C. O.....524 Chadakoin bldg.
Pederson, C. C.....First Nat. Bank bldg.
Rulifson, F. W.....Squires Court

KENMORE.

Lanphear, W. G.....

KINGSTON.

Betz, Gerard W.....51 John st.
Kingman, S. E.....130 Highland av.
Longyear, A. C.....66 Chester st.
Rice, Thomas P.....72 Sumner st.
Teller, Myron S.....230 Wall st.

LIBERTY.

Lawrence, J. Melville.....155 Webster av.

LITTLE FALLS.

Cook, Harold J.....The Richmond
Haug, Carl, & Son.....501 E. Main st.

LIVONIA.

Humphrey, W. E.....

MAMARONECK.

Leddy, Andrew F.....138 Mamaroneck av.
Oakley, Charles T.....St. Thomas bldg.
Waterbury, Edwin.....24 Mt. Pleasant av.

MIDDLETOWN.

Canfield, D. H.....Argus bldg.
Lindsey, F. J.....18 Union st.
Norton, A. G.....45 Washington st.
Poesl, F.....18 Union st.
Smith, Charles H.....15 King st.
Valkenburgh, Ed. V.....42 North st.

MILLERTON.

Beers & Trafford.....

MOUNT KISCO.

Meres, Guy F.....17 Stewart pl.

MOUNT MORRIS.

Foote, C. A.....Stanley st.

MOUNT VERNON.

Fuchs, George.....115 Wallace av.
Greenfield, Robt. A.....Postoffice bldg.
Gutenberg, S. A.....Proctor bldg.
Jenks, A. Muray.....11 South Fourth st.
Middleton, William B.....110 W. Sidney av.
Perry, James H.....349 S. Fourth st.
Rapelye, Henry S.....103 S. Sixth av.
Robinson, H. J., Jr.....Nat. Bank bldg.
Stickles, Walter F.....37 Prospect av.

NAPANOCH.

Norden, Andrew.....Kingston State rd.

NEWBURGH.

Esterbrook & Hanford.....75 Second st.

NEW ROCHELLE.

Anthes, Henry G.....Jefferson st.
Barnard, Laurence L.....46 Lawton st.
Gahan, Joseph V.....254 Huguenot st.
Howell, Frank S.....21 Bancker pl.
Kilthau, Gustave.....1 Neptune Island
Loeb, L. M.....Premium Pt. Park
Lupprain, Chas. A.....180 Main st.
McCollin, W. H.....230 Huguenot st.
McCormick, H. E.....346 Main st.
Radcliffe, Robert D.....187 Drake av.
Raymond, W. Oakley.....307 Webster av.
Sundberg, August.....78 North av.
Winter, Fred E.....270 Main st.
Wise, Lorillard.....252 Huguenot st.

NIAGARA FALLS.

Larke, Simon.....719 Main st.
Mess, Henry G.....1004 Ontario st.
Obenhack, C. F.....501 Gluck bldg.
Phelps, Chester R.....161 Gluck bldg.
White, J. R.....8-9 Arcade bldg.
Wright & Kremers.....407 Gluck bldg.

NORTH TONAWANDA.

Eggert, Louis F.....35 Elmwood av.

OGDENSBURG.

Williams & Johnston.....40 Ford st.
Wilson, G. E.....53 State st.

OLEAN.

Kaufman, H. J.....143½ N. Main st.

ONEIDA.

Skinner, Theodore.....

ONEONTA.

Epps, Otto.....

OSSINING.

Rahmann, W. H.....Albany Post rd.

OSWEGO.

Seeber, John H.....11 Arcade bldg.

PALMYRA.

Blaby, Joseph.....Jauvier blk.

PEEKSKILL.

Barker, Asbury.....139 Depew st.
Baxter, Geo.....11 Nelson av.
Hopkins Bros.....814 Central av.
Lockwood, W. D.....Flatiron bldg.

PLATTSBURG.

Signor, Ralph L.....28 Brinkerhoff st.

PLEASANTVILLE.

Entz, George G.....

PORT CHESTER.

Ponty, D. H.....72 Westchester av.
Slater, Howard P.....325 Irving av.
Wahr, W. A.....124 N. Main st.
Wetmore, W. Stanley.....1 N. Main st.

POTSDAM.

Waite, John.....9 Washington st.

POUGHKEEPSIE.

Beardsley, Wm. J.....49 Market st.
Carpenter, Dubois.....45 Market st.
Freeman, George R.....54 Market st.
La Dow, Jared S.....35 Market st.
Leeming & Wardner.....1 Washington st.
Smith, Edward C.....39 Market st.

RENSSELAER.

Lape, John F.....15 Riverside av.

ROCHESTER.

Arnold, James B.....415 Cutler bldg.
Barrows, Chas. Storrs.....344 East av.
Block & Diemer.....633 Mercantile bldg.
Bragdon, Claude.....414 Cutler bldg.
Brazill, Leo J.....233 Saratoga av.
Brockett, W. J.....249 Cutler bldg.
Brockett, W. J.....345 Powers bldg.
Cassebeer, Walter H.....222 Sibley blk.
Connellan, John B.....55 Erion Crescent
Corbett, Lawrence.....129 Weld st.
Crandall & Strobel.....401 E. & B. bldg.
Drago, Peter.....94 Hobard st.
Dryer, O. W.....310 Cutler bldg.
Eldridge, Charles William.....210 Cutler bldg.
Foote, Headley & Carpenter.....401 Carter bldg.
Foster, Edwin G.....170 Laburnum bldg.
Fowler, Fred'k H.....102 Melville bldg.
Fuhrer, William J.....243 Clifford av.
Gordon & Madden.....300 Sibley blk.
Gronwey, E. P.....163 Plymouth av.
Haddon, Horace T.....507 Cutler bldg.
Hirschfelder, Chas. M.....62 State st.
Hutchinson & Cutler.....312 Cutler bldg.
Lazeler, H. L.....528 Mercantile bldg.
Leggett, Clarence F.....179 Troup st.
Lempert, Leon H.....149 Cutler bldg.
May, Alice R., Miss.....100 Anderson av.
McCord & Ives.....627 Powers bldg.
Monks, G. R. M.....148 Weld st.
Mott, Truman A.....567 Averill av.
Moulthrop, Ray.....210 Augustin st.
Nurse, Howard B.....207 Cutler bldg.
Oberlies, Joseph H.....838 Granite bldg.
Otis, George T.....82 Plymouth av.
Platt, J. Mills.....524 Cutler bldg.
Prembroke, W. S.....67 Asbury st.
Rees, G. M.....Granite bldg.
Richardson, W. H.....167 Troup st.
Rockfellow, Annie G.....17 Buckingham st.
Seeley, F. Carl.....Dake bldg.
Siegel, Abram.....259 Baden st.
Stern, Leon.....1017 Chamber of Com. bldg.
Tyler, James R.....714 Insurance bldg.
Van Ingen, Hendrik.....347 Cutler bldg.
Vickery, John W.....300 Sibley blk.
Walker, Livingston & Brackett.....622 E. & B. bldg.
Warner, J. Foster.....1036 Granite bldg.
Weinrichter, Ralph M.....521 Cutler bldg.

ROME.

Kirkland, Frank W.....103 W. Dominick st.
Schillner, G. C.....Saulspough blk.

ROUND TOP.

Simpson, Alf. W.....

RYE.

Wainwright, Rich. T.....

SARANAC LAKE.

Schrader, G. F.....80 Main st.
Scoops & Feustmann.....Main st.
Westhoff, Max H.....

SARATOGA.

Bullard, H. B.....1st Nat. Bank bldg.

SARATOGA SPRINGS.

Breeze, A. Newton.....432½ Broadway

SCARBORO-ON-HUDSON.

Arnold, Clinton S.....

SCHENECTADY.

Atkinson, E. G.....434 State st.
Davis, E. L.....159 Clinton st.
Heidrich, Charles A.....423 State st.
Mynderse, W. T. B.....225 State st.
Obenaus Nichols Co.....208 Centre st.
Stephans, Walter.....208 Centre st.
Van Rensselaer, C. G.....437 State st.

SCHOHARIE.

Lawton, George Marshall.....

SENECA FALLS.

Dunning, Wm. Edgar.....6-8 King blk.

SPRING BROOK.

Leibold, Thomas E.....

SPRING VALLEY.

Eickhoff, O. S.....43 Ridge av.

SYRACUSE.

Adams, Norman W.....619 Summit av.
Arnold, M. V.....206 Roosevelt st.
Bates, John.....730 S. Crouse av.
Belknap, Wm. L.....307 Gifford st.
Brockway, A. L.....Third Nat. Bank bldg.
Brown, Francis J.....523 Allen st.
Collin, Dwight R.....Third Nat. Bank bldg.
Conway, Merritt C.....211 Furman st.
Curtis C. Merritt.....301 Tallman st.
Field & Ganung.....401 Gurney bldg.
Gaggin & Gaggin.....920 University blk.
Gillette, Thurber J.....811 Park st.
Granger, M. E.....1507 S. Geddes st.
Hallenbeck, Earl.....Syracuse University
Howard, Edw. A.....503 The Bastable
Howard, Russell S.....503 The Bastable
Howe, Leon B.....820 Irving av.
La Vaute, N. H.....421 First Nat. Bank bldg.
Lear, Fred. B.....Syracuse University
Makepeace & Makepeace.....116 S. Salina st.
Mangin, Thomas F.....701 Raynor av.
Meehan, James D.....323 Bastable bldg.
Moulton, Webster C.....302 Union bldg.
Phoenix, Harry D.....437 Union bldg.
Randall, James A.....705 S. A. & K. bldg.
Revels, Frederick W.....Syracuse University
Russell & King.....602 Snow bldg.
Sacket & Park.....34 Syracuse Sav. Bank bldg.
Scrafford, J. M.....726 Lancaster av.
Sharp, W. F.....1710 E. Fayette st.
Stevens, W. E.....152 Barrett st.
Taber & Baxter.....411 Gurney bldg.
Taylor & Bonta.....615 Gurney bldg.
Van Auker, Prof. G. L.....Syracuse University
Van Rensselaer, C. G.....175 Jay st.
Wadsworth & Tiffany.....608 Walnut st.
Ward, Ward W.....720 Dillaye blk.
Wilsey, Charles D.....611 S. A. & K. bldg.
Wright, Gordon A.....219 Union st.
Young, Gustavus.....205 Davis st.

TARRYTOWN.

Blouin, Joseph, Jr.....175 Wildey st.

TROY.

Clark, William E.....506 Cannon pl.
Cummings, M. F. & Son.....State Bank bldg.
Demers & Mosley.....Union Nat. Bank bldg.
Fielding, Harry P.....282 River st.
Hatch, William W.....251 Broadway
Lee, Stanton P.....55 Third st.
Loth, Edward W.....253 Broadway
Milliman, Louis N.....30 Second st.
Sweet, William.....413 Boardman bldg.

UNION FORT.

Hausle, Max.....Powell av.

UTICA.

Agne, Rushmer & Jennison.....	 Arcade bldg.
Bagg, Egbert, Jr.....	40 Clarendon bldg.
Decker, H. M.....	609 Broadway
Frank, Walter G.....	Clarendon bldg.
George, Richard A.....	60 Genesee st.
Gouge & Ames.....	70 Genesee st.
Hobbs, John A.....	38 Stewart bldg.
Hubbard, Melvin H.....	 Paul bldg.
Jackson, G. Edwin.....	Clarendon bldg.
Jones, H. A.....	18 Georgitsso bldg.
Kiehm, Charles.....	27 Lardner bldg.
Kinne, Linn.....	252 Genesee st.
Kuehnling, J. H.....	72 Charlotte st.
Strobel, W. L.....	62 Martin bldg.
Williams, T. H.....	Shubert bldg.

WATERLOO.

Van Kirk, M. L., & Son.....	Main st.
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WATERTOWN.

Greene, H. W.....	408 Sherman bldg.
Hamilton, George.....	Jefferson Co. Bank bldg.
Kieff, David D.....	18 Flower bldg.
Lansing, A. F.....	Northern Trust Co. bldg.
Skinner, A. M.....	611 Rothstock bldg.
Steege & Dewey.....	217 Charlebois bldg.

WHITE PLAINS.

Brown, Frank Horton.....	154 Main st.
Moore, John C.....	Realty bldg.
Swartwout, R. G.....	Realty bldg.
Rausch, Henry.....	Realty bldg.

YONKERS.

Birmingham, J. Edw.....	45 Warburton av.
Brown, Elliott L.....	498 S. Broadway
Chamberlain, G. H.....	18 S. Broadway
Cowles, George Starin.....	8 Main st.
Cox & Barclay.....	45 Warburton av.
Duncan, Arthur M.....	497 Van Courtland Park av.
Forsyth, J. Duncan.....	 Warburton bldg.
Frank, Ernest C.....	137 Buena Vista av.
Grewey, Emil.....	45 Warburton av.
Heapy, William P.....	288 Hawthorne av.
Katz, William P.....	12 N. Broadway
Kinkman, Samuel E.....	14 Read av., Crestwood
Kirst, J. Wilford.....	12 N. Broadway
Phillips, Frank.....	79 Morningside av.
Quick, H. Lansing.....	18 Getty Square
Rayner, G.....	15 Warburton av.
Schonback, Anton.....	18 S. Broadway
Snyder, William F.....	Getty Square
Van Suetendael, A. J.....	15 N. Broadway
Watson, James A.....	34 Warburton av.

ARCHITECTS (MEMBERS N. Y. S. A.) IN OTHER STATES.

Bluemner, Oscar J.....	63 Willet St., Bloomfield, N. J.
Breitman, Jos. J.....	1434 2d St., Washington, D. C.
Davis, Edward Herbert.....	Union National Bank Building, Scranton, Pa.
DeForrest, Lockwood.....	1815 Laguna St., Santa Barbara, Cal.
Dieffenbach, Chas. F.....	84 Washington St., Hoboken, N. J.
Eyre, Wilson.....	1003 Spruce St., Philadelphia, Pa.
Fischer, Fredk. W.....	1 Newark St., Hoboken, N. J.
Garipey, Raoul.....	25 St. James St., Montreal, Can.
Gebhard de Narrone, A. Paul.....	Ascuncion, Paraguay, S. A.
Holland, J. C.....	719 Mills Building, Topeka, Kan.
Hunt, George W.....	Englewood, Cal.
Lang, Otto H.....	Dallas, Tex.
Long, Bruce H.....	303 Marshall Bldg., Cleveland, Ohio
Overbeck, H. A.....	502 Juanita Building, Dallas, Tex.
Phelps, H. T.....	San Antonio, Tex.
Poggi, E. H.....	Coal Exchange Building, Wilkes-Barre, Pa.
Reilly, Francis X.....	Pottsville, Pa.
Ritcher, A. A.....	Reading, Pa.
Rose, Wm. W.....	Kansas City, Kan.
Sansbury, Geo. F.....	Cumberland, Md.
Watson, A. O.....	Austin, Tex.
Witchell, Frank O.....	Dallas, Tex.

MEMORANDUM



REGISTRATION OF ARCHITECTS

Under the
BOARD OF REGENTS
of the
UNIVERSITY OF THE STATE OF NEW YORK

AN ACT to Amend the General Business Law, in Relation to the Practice of Architecture.

ARTICLE 7-A

- Section 77. Registered architects.
78. Board of examiners.
79. Qualifications; examinations; fees.
79-a. Certificates (1-2).
79-b. Violation of article.

SEC. 79-a. 2. Every person securing such certificates shall *register in the office of the county clerk of the county in which he maintains a place of business, in a book kept by the clerk for such purpose, his name, residence, place and date of birth and post-office address, source, number and date of his certificate of registration to practice architecture and the date of such registration, which registration he shall be entitled to make only upon showing to the county clerk his certificate of registration and making an affidavit of the above facts, and that he is the identical person named in the certificate; that before receiving the same he complied with all of the preliminary requirements of this article and the rules of the regents and the board of examiners as to the terms and the amount of study and examination; that no money other than the fees prescribed by this article and such rules was paid directly or indirectly for such registration, and that no fraud, misrepresentation or mistake in material regard was employed or occurred in order that such certificate should be made, which affidavit shall be preserved in a bound volume by the county clerk. The county clerk shall indorse or stamp on the back of the certificate the date and his name preceded by the word "registered as authority to practice as a registered architect, in the clerk's office of county"; and shall issue to each person duly registering and making such affidavit a certificate of registration in his county which shall include a transcript of the registration. Such transcript and the certificate of registration may be offered as presumptive evidence in all courts of the facts stated therein. The county clerk's fee for taking such registration and affidavit and issuing such certificate shall be one dollar. Any person who, having lawfully registered as aforesaid, shall thereafter change his name in any lawful manner, shall register the new name with a marginal note of the former name, and shall note upon the margin of the former registration the fact of such change and a cross reference to the new registration. A county clerk who knowingly shall make or suffer to be made upon the book of registry of architects kept in his office any other entry than is provided for in this article shall be guilty of a misdemeanor.*

3. An architect having duly registered to practice as a registered architect in one county and removing his practice or a part thereof to another county or regularly engaging in practice or opening an office in another county, shall show or send, by registered mail, to the clerk of such other county, his certificate of registration. If such certificate clearly shows that the original registration was duly issued under seal by the board of regents, the clerk shall thereupon register the applicant in the latter county on receipt of a fee of twenty-five cents and shall stamp or indorse on such certificate the date and his name, preceded by the words "Registered also in county," and return the certificate to the applicant.



MECHANICS' LIEN LAW of the STATE OF NEW YORK

(For Full Text See Year Book for 1916)

IMPORTANT TO ARCHITECTS

The New York Society of Architects, unassisted and against strenuous opposition, succeeded in 1916 in having the Mechanics' Lien Law amended so as to extend its protection to the claims of architects for services rendered in preparing plans and specifications. See amended definition of the term improvement, appended hereto:

Improvement. The term "improvement," when used in this chapter, includes the erection, alteration or repair of any structure upon, connected with, or beneath the surface of, any real property and any work done upon such property, or materials furnished for its permanent improvement, and shall also include any work done or materials furnished in equipping any such structure with any chandeliers, brackets or other fixtures or apparatus for supplying gas or electric light, AND SHALL ALSO INCLUDE THE DRAWING BY AN ARCHITECT OR ENGINEER OF ANY PLANS OR SPECIFICATIONS WHICH ARE USED IN CONNECTION WITH SUCH IMPROVEMENT.

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THE BUILDING CODE
of the
CITY OF NEW YORK
Applying to All Boroughs

As adopted March 14, 1916, and amended to September 21, 1918.

EXECUTIVE ADMINISTRATORS:

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Municipal Building.
Tel. Worth 4227.

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Borough Hall.
Tel. Main 3960

QUEENS

J. W. MOORE, Supt.,
Queens Subway Building, Long Island City.
Tel. Hunter's Point 5400

RICHMOND

W. J. McDERMOTT, Supt.,
Borough Hall.
Tel. Tompkinsville 1000.

Note:—Members desiring information relative to this code may apply to the
COMMITTEE ON CITY BUILDING CODE OF THE NEW YORK SOCIETY
OF ARCHITECTS

Henry Holder, Jr., Chm.
John H. Friend

John P. Leo, V-Chm.
William J. Russell

Gustave Erda, Secretary.
Otto Loeffler.

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MEMORANDUM

THE BUILDING CODE

ARTICLE 1

GENERAL PROVISIONS

(In effect March 14, 1916)

- Section 1. Scope.
 2. Definitions.
 3. Application for permits.
 4. Permits.
 5. Certificate of occupancy.
 6. Modifications.
 7. Rules.
 8. Approved materials, appliances and methods of construction.
 9. Seal of building bureau.
 10. Right of entry of officers and employees.

SEC. 1. SCOPE 1. SHORT TITLE.—This chapter shall be known and cited as the Building Code.

2. MATTER COVERED.—All matters concerning, affecting or relating to the construction, alteration or removal of buildings or structures, erected or to be erected in the city are presumptively provided for in this chapter, except in so far as such provisions are contained in the Charter, the Tenement House Law, the labor law, or the rules promulgated in accordance with the provisions of this chapter by the superintendents of buildings of the several boroughs.

3. CHAPTER REMEDIAL.—This chapter is hereby declared to be remedial, and shall be construed liberally, to secure the beneficial interests and purposes thereof.

4. ALL NEW WORK TO CONFORM.—No wall, structure, building or part thereof shall hereafter be constructed, nor shall the plumbing nor drainage, or other equipment, of any building, structure or premises, so far as provided for in this chapter, be constructed or altered in the city, except in conformity with the provisions of this chapter. No building already erected, or hereafter to be built in said city, shall be altered in any manner that would be in violation of any of the provisions of this chapter, or any rule or approval of the superintendent of buildings made and issued thereunder; but nothing in this chapter shall prohibit the raising or lowering of any building to meet a change of grade in the street on which it is located, provided that the building is not otherwise altered.

5. UNDEVELOPED LOCALITIES.—In such parts of the city outside the fire limits and suburban limits, in which a system of streets has not been established only so much of the requirements of this chapter shall apply as in the judgment of the superintendent of buildings may be necessary for safety of life and health; but this shall not be construed to permit the erection of any building to exceed in height or area the limits fixed by this chapter for such buildings.

6. BUILDINGS AFFECTED.—All provisions of this chapter shall apply with equal force to municipal buildings as they do to private buildings, except as may be specifically provided for by law.

SEC. 2. DEFINITIONS.—Unless otherwise expressly stated the following terms shall, for the purposes of this chapter, have the meaning herein indicated:

a. Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural the singular; the word "person" includes a corporation as well as an individual; "writing" includes printing, and printed or typewritten matter; "oath" includes affirmation; "signature" or "subscription" includes "mark," when the person cannot write, his name being written near it.

b. The term "occupied" as applied to any building, shall be construed as though followed by the words "or intended, arranged or designed to be occupied."

c. The term "approved" as applied to any material, device or mode of construction, means approved by the superintendent of buildings under the provisions of this chapter, or by any other authority designated by law to give approval in the matter in question.

d. The term "owner" includes his duly authorized agent or attorney, a purchaser, devisee, and any persons entitled to an interest in the property in question.

e. An alteration, as applied to a building or structure, is any change or rearrangement in the structural parts or in the exit facilities, or any enlargement, whether by extend.

ing on any side or by increasing in height, or the moving from one location or position to another.

f. The term "curb" when used in defining the height of a building means the mean curb level at that front of the building which faces on the street of greatest width, or, if the greatest width occurs on more than one of the streets on which the building faces, the mean curb level at that point of the building which faces on the street of greatest width and having the highest curb.

The term "curb" when used in fixing the depth of an excavation, means the curb level at that point of the curb which is nearest to the point of the excavation in question.

g. The term "height" as applied to a building or structure means the vertical distance, measured in a straight line from the curb level, or if the grade of the street has not been legally established or the building does not adjoin the street, from the average level of all the ground adjoining such building to the highest point of the roof beams in the case of flat roofs, and to the average height of the gable in the case of roofs having a pitch of more than twenty degrees with a horizontal plane.

h. A story is that part of any building comprised between any floor and the floor or roof next above.

i. A tenement house is a building as defined in the Tenement House Law.

j. The terms "garage," "storage garage," "non-storage garage," "motor vehicle repair shop" and "oil selling station" shall have the meanings indicated in chapter 10 of the Code of Ordinances.

SEC. 3. APPLICATION FOR PERMITS. 1. FOR CONSTRUCTION OR ALTERATION.—Before the construction or alteration of any building, wall or structure, or any part of either, or of any platform, staging or flooring to be used for standing or seating purposes, and before the construction or alteration of the plumbing or drainage of any building, structure or premises is commenced, the owner or lessee, or agent of either, or the architect or builder employed by such owner or lessee in connection with the proposed construction or alteration, shall submit to the superintendent of buildings a detailed statement in triplicate of the specifications, on appropriate blanks to be furnished to applicants by the bureau of buildings, and such plans and structural detail drawings of the proposed work as the superintendent of buildings may require. Such statement constituting an application for a permit to construct or alter, shall be accompanied by a further statement in writing, sworn to before a notary public or commissioner of deeds, giving the full name and residence of each of the owners of said building or proposed building, structure or proposed structure, premises, wall, platform, staging or flooring, and by a diagram of the lot or plot on which such construction or alteration is to be made, showing the exact location of any proposed new construction and all existing buildings or structures that are to remain.

2. AUTHORIZATION OF OWNER.—If the construction, alteration or plumbing or drainage or the alteration thereof, is to be made or executed by any other person than the owner of the land in fee, the person intending to make such construction or alteration, or to construct such plumbing or drainage, shall, either as owner, lessee, or in any representative capacity, accompany the application to build or alter with a statement in writing, sworn to as aforesaid, giving the full name and residence of each of the owners of the land, building, or proposed building, structure or proposed structure, premises, wall, platform, staging or flooring, and reciting that he is duly authorized to perform said work. Such statement may be made by the agent or architect of the person hereinbefore required to make the same.

3. NOTICE TO DEMOLISH.—Before any existing building or part of an existing building is demolished, a statement in writing on appropriate blanks to be furnished by the bureau of buildings, constituting a notice to demolish, shall be submitted to the superintendent of buildings by the owner or any person authorized by the owner, giving the full name and residence of each of the owners of the building to be demolished, the name and business address of the person who is to do the work and such other information respecting the building as the superintendent of buildings may require. Such notice shall be submitted not less than forty-eight hours before the work of demolition is commenced.

4. PLACE OF FILING.—All applications, notices and sworn statements required by this section, and copies of the approved plans shall be kept on file in the office of the superintendent of buildings. Applications shall be promptly docketed as received. For purposes of identification and reference all such papers shall be marked with the block and lot number of the property to which they apply, and with the street and house number when possible.

5. AMENDMENTS.—Nothing in this chapter shall prohibit the filing of amendments to any application at any time before the completion of the work for which permit was sought, and such amendments, after approval, shall be made part of the application and filed as such.

6. ORDINARY REPAIRS EXCEPTED.—Ordinary repairs to buildings or structures, or to the plumbing and drainage thereof, may be made without notice to the superintendent of buildings, but such repairs shall not be construed to include the cutting away of any wall

or any portion thereof, the removal or cutting of any beams or supports, or the removal, change or closing of any stairway or required means of exit, or the alteration of any house sewer, private sewer or drainage system, or the construction of any waste pipe.

SEC. 4. PERMITS. 1. APPROVAL OF APPLICATIONS.—It shall be unlawful to construct or alter any building, structure, wall, platform, staging or flooring, or any part thereof, or any plumbing and drainage, until the application and plans required by Sec. 3 of this article shall have been approved by the superintendent of buildings, and a written permit issued by him. The superintendent of buildings shall approve or reject any application or plan, or amendment thereto, filed with him pursuant to the provisions of this article within a reasonable time and, if approved, shall promptly issue a permit therefor.

2. APPROVAL IN PART.—Nothing in this section shall be construed to prevent the superintendent of buildings from approving and issuing a permit for the construction of part of a building or structure, when plans and detailed statements have been presented for the same, before the entire plans and detailed statements of said building or structure have been submitted or approved.

3. SIGNATURE TO PERMIT.—Every permit issued by the superintendent of buildings under the provisions of this chapter shall have his signature affixed thereto, but this shall not prevent the superintendent from authorizing any subordinate to affix such signature.

4. LIMITATIONS.—Any permit issued by the superintendent of buildings under the provisions of this article, but under which no work is commenced within one year from the time of issuance, shall expire by limitation.

5. COMPLIANCE WITH PLANS.—The construction or alteration of any building, structure, platform, staging or flooring, or of any plumbing or drainage, shall be in accordance with the approved detailed statement of specifications and plans, for which the permit was issued, or any approved amendment thereof. The superintendent may require a certified copy of the approved plans to be kept at all times on the premises from the commencement of the work to the completion thereof.

6. ADHERENCE TO DIAGRAM.—The location of any new building or structure, or of any extension to an existing building or structure, shown on the diagram filed as required by section 3 of this article, or on any approved amendment thereof, shall be strictly adhered to. It shall be unlawful to reduce or diminish the area of any lot or plot, a diagram of which has been filed with an application to construct or alter and has been used as the basis for a permit, unless the building or structure for which the permit was issued complies in all respects with the requirements of this chapter for buildings or structures located on plots of such diminished area, provided, however, that this shall not apply to any case in which the lot area is reduced by reason of any street opening or widening or other public improvement.

7. REVOCATION.—The superintendent of buildings may revoke any permit or approval issued under the provisions of this article, in the case of any false statement, or any misrepresentation as to a material fact in the application on which the permit or approval was based.

SEC. 5. CERTIFICATE OF OCCUPANCY. 1. NEW BUILDINGS.—No building hereafter erected shall be occupied or used, in whole or in part, for any purpose whatever until a certificate of occupancy shall have been issued by the superintendent of buildings certifying that such building conforms substantially to the approved plans and specifications and the requirements of this chapter applying to buildings of its class and kind.

2. BUILDINGS HEREAFTER ALTERED.—No building hereafter altered, which was vacant during the progress of the work of alteration, shall be occupied or used, in whole or in part, for any purpose whatever, until a certificate of occupancy shall have been issued by the superintendent of buildings certifying that the work for which the permit was issued has been completed substantially in accordance with the approved plans and specifications and the provisions of this chapter applying to such an alteration; and when the occupancy or use of a building has continued during the work of alteration, the occupancy or use of the building shall not continue for more than thirty days after completion of the alteration unless such certificate shall have been issued.

3. EXISTING BUILDINGS.—Nothing in this section shall prevent the continuance of the present occupancy and use of any now existing building, except as may be specifically prescribed by this chapter or as may be necessary for the safety of life or property. Upon written request from the owner, the superintendent of buildings shall issue a certificate of occupancy for any now existing building, certifying after verification by inspection, the occupancy or use of such building, provided that at the time of issuing such certificate there are no notices of violation, or other notices or orders pending in the bureau of buildings.

4. CHANGE OF OCCUPANCY.—No change of occupancy or use shall be made in any building or part thereof, hereafter erected or altered, that is not consistent with the last

issued certificate of occupancy for such building. In case of any now existing building, no change of occupancy that would bring it under some special provision of this chapter, shall be made, unless a certificate is issued by the superintendent of buildings certifying that such building conforms to the provisions of this chapter with respect to buildings hereafter altered for the proposed new occupancy and use.

5. **TEMPORARY OCCUPANCY.**—Upon request of the owner or his authorized representative, the superintendent of buildings shall issue a temporary certificate of occupancy for part of a building, provided that such temporary occupancy or use would not in any way jeopardize life or property.

6. **CONTENTS OF CERTIFICATE.**—In addition to the certification when required by this section, as to compliance with approved plans and specifications, and provisions of this chapter, all certificates of occupancy shall state the purposes for which the buildings may be used in its several parts, the maximum permissible live loads on the several floors, the number of persons that may be accommodated in the several stories, in case such number is limited by any provision of this chapter or the approved specifications, and all special stipulations of the permit, if any.

7. **ISSUANCE AND FILING.**—Certificates of occupancy shall be issued within ten days after written application therefor, if said building at the date of such application shall be entitled thereto. A record of all certificates shall be kept in the bureau of buildings and copies shall be furnished, on request, to any person having a proprietary interest in the building affected.

SEC. 6. **MODIFICATIONS.**—In exercising his powers to vary the provisions of this chapter, or any rule authorized thereunder, the superintendent of buildings shall proceed in accordance with the provisions of the Greater New York Charter establishing that power. A record of all modifications shall be kept in the bureau of buildings, properly indexed and open to public inspection during business hours. All modifications, including the applicant's petition for same and the superintendent's reasons for granting, shall be published in full in the City Record within two weeks after the superintendent's action, and may be cited as precedents.

SEC. 7. **RULES. 1. AUTHORITY TO ADOPT RULES.**—The superintendent of buildings shall have power to adopt such rules with respect to the materials and mode of construction, consistent with the provisions of this chapter, as may be necessary to secure the intent and purposes of this chapter and a proper enforcement of its provisions. For any provisions of this chapter referring to the rules or requiring approvals of materials or modes of construction, such superintendent shall adopt, when this section becomes effective or as the necessity may arise, such rules as are required or will establish the conditions of approval. So far as practicable such rules shall be uniform in all the boroughs.

2. **PROCEDURE.**—No rule adopted by the superintendent of buildings shall become effective until it shall have been published in the City Record on eight successive Mondays, and until a public hearing on the same shall have been held, provided, however, that said public hearing shall not be necessary for the purposes of this chapter unless a request shall have been made for such hearing during the said period of publication. Any rule adopted and promulgated as herein provided shall have the same force and effect as any provision of this chapter. All rules heretofore legally promulgated and in force at the time when this section becomes effective shall continue in force, provided they are not inconsistent with any provision of this chapter.

3. **AMENDMENT AND REPEAL.**—The superintendent of buildings may amend or repeal any rule by the same procedure prescribed for the adoption of new rules.

SEC. 8. **APPROVED MATERIALS, APPLIANCES AND METHODS OF CONSTRUCTION.**—Whenever any materials, appliances or methods of construction have been approved by the superintendent of buildings as conforming to tests prescribed by this chapter, or to any rules adopted thereunder, a notice to that effect shall be published in the City Record, including information as to the conditions under which said materials, appliances or methods of construction were tested and approved. A list of such materials, appliances and methods of construction shall be kept on file in the bureau of buildings, properly indexed and open to public inspection during business hours.

SEC. 9. **SEAL OF BUILDING BUREAU.**—Each superintendent of buildings may adopt a seal and direct its use in his bureau.

SEC. 10. **RIGHT OF ENTRY OF OFFICERS AND EMPLOYEES.**—Any officer or employee of the bureau of buildings, so far as it may be necessary for the performance of his duties, shall have the right to enter any building or premises in said city upon showing his badge of office.

ARTICLE 2

MATERIALS

(In Effect March 30, 1915)

- Section 20. Quality of materials.
 21. Weights of materials.
 22. Tests.
 23. Brick.
 24. Sand.
 25. Lime.
 26. Cement.
 27. Mortar.
 28. Concrete.
 29. Hollow Building Blocks.
 30. Iron and Steel.
 31. Timber.

SEC. 20. QUALITY OF MATERIALS.—All building materials shall be of a quality to meet the intent of this chapter, and shall conform to such specifications, consistent with the requirements of this chapter, as may be promulgated by the superintendent of buildings.

SEC. 21. WEIGHT OF MATERIALS.—The weights of various materials in pounds per cubic foot shall be assumed to be as follows:

Brickwork.....	120
Concrete, cinder, used for floor arches or slabs.....	108
Concrete, cinder, used for filling over fireproof floors.....	60
Concrete, stone.....	144
Granite, bluestone and marble.....	168
Limestone.....	156
Sandstone.....	144
Oak and longleaf yellow pine.....	48
Spruce, fir, hemlock, white pine and shortleaf yellow pine.....	30

SEC. 22. TESTS. 1. WHEN REQUIRED.—New structural material, or structural material not otherwise provided for in this chapter, shall be subjected to such tests, to determine its character and quality, as the superintendent of buildings shall direct. Appliances and devices required by any of the provisions of this chapter and new methods of construction shall be subjected to such tests to determine their efficiency, as the superintendent of buildings may direct. Such tests as may be required under this section shall be described in rules promulgated by the superintendent of buildings.

2. TESTS OF MATERIALS.—All tests shall be conducted under the supervision of the superintendent of buildings, or his authorized representative. Laboratory tests shall be conducted at a testing laboratory of recognized standing. A superintendent of buildings conducting a test under the provisions of this section shall notify the superintendents of buildings of the other boroughs at least three days in advance of such test.

3. APPROVAL.—Any material, appliance or method of construction meeting the requirements of this chapter or the specifications authorized thereunder shall be approved within a reasonable time after the completion of the tests. All such approvals and the conditions under which they are issued shall be published in the City Record, within a month after issuance, and a complete list of all such approvals issued during the year shall be included in the annual report of the superintendent of buildings. The superintendent of buildings may prohibit the use of any material or appliance failing to conform to the requirements of this chapter or to the rules adopted thereunder.

4. CONDITIONS ATTACHING TO APPROVALS.—Materials, appliances or methods of construction which have been tested and approved shall be used and installed in accordance with the terms of the approval. So far as practicable all materials and appliances for which approvals have been issued shall have a distinctive brand mark for identification impressed on or otherwise attached to them. It shall be unlawful to use any such brand mark on any other material or appliance than that for which the approval was issued.

5. ADDITIONAL TESTS.—The superintendent of buildings may require any tests to be repeated if there is any reason to believe that the material or appliance is no longer up to the specifications on which the approval was based.

SEC. 23. BRICK.—The brick used in the construction of buildings shall be sound, well burnt brick. When old brick are used in any wall they shall be thoroughly cleaned before being used, and shall be whole and good, hard, well burnt brick.

SEC. 24. SAND.—The sand used for building construction shall be clean, sharp, coarse and silicious.

SEC. 25. LIME.—Quick lime and hydrated lime shall conform to such specifications as may be promulgated by the superintendent of buildings, or, in the absence of such specifications, with the standard specifications of the American Society for Testing Materials.

SEC. 26. CEMENT.—Portland and natural cements shall conform to such specifications as may be promulgated by the superintendent of buildings in accordance with the provisions of this chapter, or, in the absence of such specifications, with the standard specifications of the American Society for Testing Materials.

SEC. 27. MORTAR. 1. CEMENT.—Cement mortar shall be made of cement and sand in the proportion of 1 part of cement and not more than 3 parts of sand by volume, or, in the case of bag mortars prepared under rules promulgated by the superintendent of buildings, in such proportion that the tensile strength per square inch at the age of 28 days shall be not less than 250 pounds when Portland cement is used, and 125 pounds when natural cement is used. Cement mortar shall be thoroughly mixed and shall be used immediately after the addition of water. Not more than 15 per cent. of the cement by volume may be replaced by an equal volume of lime.

2. CEMENT AND LIME.—Cement-lime mortar shall be made of 1 part of lime, 1 part of cement and not more than 3 parts of sand to each by volume.

3. LIME.—Except as may be otherwise provided, lime mortar shall be made of 1 part of slacked lime, lime putty or dry hydrated lime and not more than 4 parts of sand by volume.

SEC. 28. CONCRETE. 1. MIXTURE.—Except as may be otherwise provided in this chapter, concrete shall be made of 1 part of cement, and not more than $2\frac{1}{2}$ parts of sand and 5 parts of coarse aggregate.

2. AGGREGATE.—The coarse aggregate shall be granite, trap rock, gravel or other hard, durable material that may be approved by a rule of the superintendent of buildings. When gravel is used it shall be thoroughly washed. Where mass concrete is used, the coarse aggregates shall be of such size as will pass through a two-inch ring. All aggregates shall be free from dust or other deleterious material.

3. CONSISTENCY.—All concrete shall be a wet mixture, and shall be placed in forms immediately after mixing, and well tamped. No concrete shall be used after initial set has begun.

4. FORMS.—All forms and centering shall be built in a substantial manner, and with joints sufficiently tight to prevent leakage of the cement. They shall be properly supported and braced as to safely sustain all the load that may be placed upon them during construction.

5. JOINTS IN CONCRETE.—Joints formed between portions of concrete placed at different times shall be made in a manner not to injure the completed structure. Before fresh concrete is joined to concrete which has set or partially set, the surface of the old concrete shall be roughened, cleaned and thoroughly wet.

6. PRECAUTIONS AGAINST FREEZING.—No materials containing frost or that are frozen shall be used. Precaution shall be taken to prevent concrete from freezing. After it has been placed in position a temperature above 32 degrees F. shall be maintained, by artificial means if necessary, until the concrete has its initial set.

SEC. 29. HOLLOW BUILDING BLOCKS. 1. CONCRETE.—Hollow building blocks of concrete shall be made of Portland cement and suitable aggregates in such proportions as to develop at the age of 28 days an ultimate crushing strength per square inch of gross area of not less than 750 pounds when tested with the cells placed vertically and 300 pounds when tested with the cells placed horizontally.

2. TERRA COTTA.—Hollow building blocks of terra cotta shall be sound, hard and well burnt and shall develop an ultimate crushing strength per square inch of gross area of not less than 1,200 pounds when tested with the cells placed vertically and 300 pounds with the cells placed horizontally.

3. ABSORPTION.—The absorption of hollow building blocks to be used for bearing or enclosing walls shall not exceed 12 per cent. in 48 hours as an average, nor more than 15 per cent. in any case.

SEC. 30. IRON AND STEEL. 1. CAST IRON.—Cast iron shall be of good foundry mixture, producing a clean, tough, gray iron. It shall conform to such specifications as may be promulgated by the superintendent of buildings, or, in the absence of such specifications, to the standard specifications of the American Society for Testing Materials for medium gray iron castings. Castings shall be free of serious blowholes, cinder spots and cold shuts.

2. **CAST STEEL.**—Steel castings for building construction shall be made of open hearth steel, and shall be practically free from blowholes. Except as may be otherwise prescribed by rules of the superintendent of buildings, they shall conform to the standard specifications of the American Society for Testing Materials for soft or medium steel castings.

3. **STRUCTURAL STEEL.**—All structural steel for buildings shall have an ultimate tensile strength of from 55,000 pounds to 65,000 pounds per square inch. Rivet steel shall have an ultimate strength of from 46,000 to 56,000 pounds per square inch. Except as may be otherwise prescribed by the rules of the superintendent of buildings, steel shall conform to the standard specifications of the American Society for Testing Materials for structural steel for buildings.

SEC. 31. TIMBER.—All timbers and wood beams used in any building shall be of good, sound material, free from rot, large and loose knots, shakes or any imperfection whereby the strength may be impaired.

ARTICLE 3

WORKING STRESSES AND LOADS

(In Effect March 30, 1915)

Section 50. General provisions.

- 51. Working stresses.
- 52. Working stresses for columns.
- 53. Loads.
- 54. Wind pressure.
- 55. Floor capacities.

SEC. 50. GENERAL PROVISIONS. 1. COMPUTATIONS.—The dimensions of the several materials and the form of each construction to be used in building shall be computed as required in the various sections of this chapter.

2. **FACTORS OF SAFETY.**—Where the unit stress of any material is not prescribed in this chapter the relation of allowable unit stress to ultimate strength shall be as 1 to 4 for metal, as 1 to 6 for timber, and as 1 to 10 for natural or artificial stones and brick or stone masonry. But wherever working stresses are prescribed in this chapter, the said working stresses shall be used.

3. **TEMPORARY SUPPORTS.**—Every temporary support placed under any building or structure, or any part thereof, during the erection, finishing, alteration or repairing of such building or structure, or any part thereof, shall be of sufficient strength to safely carry the load to be placed thereon.

SEC. 51. WORKING STRESSES. 1. SAFE CARRYING CAPACITY.—The safe carrying capacity of the various materials of construction, except in the case of columns, shall be determined by the working stresses in pounds per square inch specified in this section. Unless otherwise indicated, net sectional areas shall be used in determining the safe carrying capacity.

2. **IRON AND STEEL. (a) In compression:**

Rolled steel.....	16,000
Cast steel.....	16,000
Cast iron.....	16,000
Steel pins in bearing.....	24,000
Steel rivets, shop or power driven, in bearing.....	24,000
Steel field rivets, hand driven, in bearing.....	16,000
Steel field bolts, in bearing.....	12,000

(b) In tension:

Rolled steel.....	16,000
Cast steel.....	16,000
Cast iron.....	3,000

(c) In shear:

Steel web plates.....	10,000
Steel pins and shop or power driven rivets.....	12,000
Steel field rivets, hand driven.....	8,000
Steel field bolts.....	7,000
Cast iron.....	3,000

(d) In bending, extreme fiber:

Rolled steel beams and riveted steel beams.....	16,000
Rolled steel pins, rivets or bolts.....	20,000
Cast iron, compression side.....	16,000
Cast iron, tension side.....	3,000

3. TIMBER. (a) In compression:

Oak.....	with grain 1,400, across grain 1,000
Yellow pine, longleaf.....	with grain 1,600, across grain 1,000
Spruce and Douglas fir.....	with grain 1,200, across grain 800
White pine, shortleaf yellow pine, N. C. pine and fir—	
	with grain 1,000, across grain 800
Locust.....	with grain 1,200, across grain 1,000
Hemlock.....	with grain 800, across grain 800

(b) In tension:

Oak.....	1,200
Yellow pine, longleaf.....	1,200
Shortleaf yellow pine.....	900
Douglas fir.....	800
Spruce and fir.....	800
White pine.....	700
Hemlock.....	600

(c) In shear:

Oak.....	with grain 200, across grain 1,000
Yellow pine, longleaf.....	with grain 150, across grain 1,000
Shortleaf yellow pine, N. C. pine, Douglas fir.....	with grain 100, across grain 1,000
White pine, spruce and fir.....	with grain 100, across grain 500
Hemlock.....	with grain 100, across grain 600

(d) In bending, extreme fiber:

Oak.....	1,200
Yellow pine, longleaf.....	1,600
Douglas fir, white pine and spruce.....	1,200
Shortleaf yellow pine, N. C. pine.....	1,000
Hemlock.....	800

4. STONE, in compression:

Granite.....	1,000
Greenwich stone.....	1,200
Gneiss.....	1,000
Limestone.....	700
Marble.....	600
Sandstone.....	400
Bluestone, North River.....	2,000
Slate.....	1,000

5. MASONRY, in compression:

Grout, neat Portland cement.....	1,000
Grout, neat natural cement.....	500
Concrete, Portland cement, 1 : 2 : 4.....	500
Concrete, Portland cement, 1 : 2½ : 5.....	400
Concrete, natural cement, 1 : 2 : 4.....	210
Concrete, natural cement, 1 : 2½ : 5.....	150
Brick work in Portland cement mortar.....	250
Brick work in natural cement mortar.....	210
Brick work in lime-cement mortar.....	160
Brick work in lime mortar.....	110
Rubble stone work in Portland cement mortar.....	140
Rubble stone work in natural cement mortar.....	110
Rubble stone work in lime-cement mortar.....	100
Ashlar masonry, other than sandstone.....	600
Sandstone ashlar masonry.....	300

Hollow building blocks in cement mortar.

Terra cotta, cells vertical, gross area.....	100
Terra cotta, horizontal, gross area.....	50
Concrete, cells vertical, gross area.....	75
Concrete, cells horizontal, gross area.....	30
When filled with 1 : 3 : 6 concrete or better.....	150

SEC. 52. WORKING STRESSES FOR COLUMNS. 1. GENERAL.—In columns or compression members with flat ends, of cast iron, steel or wood, the stresses shall not exceed those specified in this section for the respective ratios of slenderness. For intermediate ratio of slenderness the working stresses shall be proportionate to those given.

2. UNSUPPORTED LENGTHS.—Columns and compression members shall not be used having an unsupported length of greater ratios than given in this section.

3. ECCENTRICALLY LOADED COLUMNS.—Any columns eccentrically loaded shall have the stresses caused by such eccentricity computed and the combined stresses resulting from such eccentricity, at any part of the columns, added to all other stresses at that part, shall in no case exceed the working stresses given in this section. The eccentric load of a column may be considered to be distributed equally over the entire area of that column at the next point below that at which the column is securely braced laterally in the direction of the eccentricity.

4. CAST IRON AND STEEL COLUMNS.—The working stresses in pounds per square inch of cross section for cast iron and steel columns shall be, when the length divided by the least radius of gyration equals

120	.....	7,600 for steel
110	.....	8,300 for steel
100	.....	9,000 for steel
90	.....	9,700 for steel
80	.....	10,400 for steel
70	.....	6,200 for cast iron, 11,100 for steel
60	.....	6,600 for cast iron, 11,800 for steel
50	.....	7,000 for cast iron, 12,500 for steel
40	.....	7,400 for cast iron, 13,200 for steel
30	.....	7,800 for cast iron, 13,900 for steel
20	.....	8,200 for cast iron, 14,600 for steel
10	.....	8,600 for cast iron, 15,300 for steel

5. WOOD COLUMNS.—The working stresses in pounds per square inch of cross section for wood posts and columns shall be, when the length divided by least side or diameter equals

30	.....	600 for longleaf yellow pine, 390 for spruce
25	.....	700 for longleaf yellow pine, 475 for spruce
20	.....	800 for longleaf yellow pine, 560 for spruce
15	.....	900 for longleaf yellow pine, 645 for spruce
12	.....	960 for longleaf yellow pine, 696 for spruce
10	.....	1,000 for longleaf yellow pine, 730 for spruce

For columns of shortleaf yellow pine, N. C. pine or Douglas fir the working stresses shall not exceed three-fourths of the corresponding values given for longleaf yellow pine; for columns of white pine or fir the working stresses shall be taken the same as for spruce; for columns of white oak the working stresses shall be taken the same as for longleaf yellow pine.

SEC. 53. LOADS. 1. DEAD LOAD.—The term "dead load" means the weight of walls, partitions, framing, floors, roofs and all permanent construction entering into any building.

2. LIVE LOAD.—The term "live load" means all forms of loading other than the weight of the material entering into the construction of the building.

3. FLOOR LOADS.—Every floor, roof, yard, court or sidewalk shall be of sufficient strength in all parts to bear safely any imposed loads, whether permanent or temporary, in addition to the dead loads depending thereon, provided, however, that no floor in any building or extension to an existing building hereafter erected, shall be designed to carry less than the following live loads per square foot of area, uniformly distributed, according as the floor may be intended or used for the purposes indicated.

Forty pounds for residence purposes.

One hundred pounds for places of assembly or public purpose, except that for class-rooms of schools or other places of instruction the floor need not be designed for more than seventy-five pounds, and

One hundred and twenty pounds for any other purpose, except that the floors of offices need not be designed for more than 60 pounds.

The live loads for which any and every floor may be designed shall be clearly shown in the application and on the plans before any permit to erect is issued.

4. CONCENTRATED LOADS.—Every steel floor beam in any building hereafter erected used for any business purpose shall be capable of sustaining a live load concentrated at its center of at least 4,000 pounds.

5. **MOVING LOADS.**—Running machinery or other moving loads shall be considered as increasing the live loads in proportion to the degree of vibratory impulse transmitted to the floor.

6. **ROOF LOADS.**—Every roof hereafter erected shall be proportionated to bear safely a live load of 40 pounds per square foot of surface when the pitch of such roof is twenty degrees or less with the horizontal, and 30 pounds per square foot measured on a horizontal plane when the pitch is more than twenty degrees.

7. **LOADS ON VERTICAL SUPPORTS.**—Every column, post or other vertical support shall be of sufficient strength to bear safely the combined live and dead loads of such portions of each and every floor as depend upon it for support, except that in buildings more than five stories in height the live load on the floor next below the top floor may be assumed at 95 per cent. of the allowable live load, on the next floor at 90 per cent., and on each succeeding lower floor at correspondingly decreasing percentages, provided that in no case shall less than 50 per cent. of the allowable live load be assumed.

8. **SIDEWALK LOADS.**—For sidewalks between the curb and building lines, the live load shall be taken at 300 pounds per square foot.

9. **YARD AND COURT LOADS.**—For yards and courts inside the building line, the live loads shall be taken at not less than 120 pounds per square foot.

Sec. 54. **WIND PRESSURE. 1. WHEN CONSIDERED.**—All buildings over 150 feet in height and all buildings or parts of buildings in which the height is more than four times the minimum horizontal dimension, shall be designed to resist a horizontal wind pressure of 30 pounds for every square foot of exposed surface measured from the ground to the top of the structure, including roof, allowing for wind in any direction.

2. **STABILITY.**—The overturning moment due to wind pressure shall not exceed 75 per cent. of the moment of stability of the structure, unless the structure is securely anchored to the foundation. Anchors shall be of sufficient strength to safely carry the excess overturning moment, without exceeding the working stresses prescribed in this chapter.

3. **ALLOWABLE STRESSES.**—When the stress in any member due to wind does not exceed 50 per cent. of the stress due to live and dead loads, it may be neglected. When such stress exceeds 50 per cent. of the stress to live and dead loads, the working stresses prescribed in this chapter may be increased by 50 per cent. in designing such member to resist the combined stresses.

SEC. 55. **FLOOR CAPACITIES. 1. ESTIMATE OF FLOOR CAPACITY.**—In every building now existing or hereafter erected, occupied wholly or in part as a business building, in which heavy materials are kept or stored, or machinery is introduced, the weight that each floor will safely sustain shall be estimated by the owner or occupant, or by a competent person employed by the owner or occupant. Such estimate shall be filed with the superintendent of buildings, properly verified by the person making the same in such manner as such superintendent may direct and shall give full information on which the estimate is based. When such estimate is found to be satisfactory and correct, the superintendent of buildings shall approve the same.

If the superintendent of buildings shall have cause to doubt the correctness of said estimate, he is empowered to revise and correct the same and for the purpose of such revision the officers and employees of the bureau of buildings may enter any building and remove so much of any floor or other portion thereof as may be required to make necessary measurements and examination. Any expense necessarily incurred in removing any floor or other portion of any building for the purpose of making any examination herein provided for shall be paid by the Comptroller, upon the requisition of the superintendent of buildings, out of the fund paid over to him under the provisions of Sec. 639 of this chapter. Such expenses shall be a charge against the person or persons by whom or on whose behalf said estimate was made, provided such examination proves the floors of insufficient strength to carry with safety the loads found upon them when such examination was made; and shall be collected in an action to be brought by the corporation counsel against said person or persons, and the sum so collected shall be paid over to the Comptroller to be deposited in said fund in reimbursement of the amount paid as aforesaid.

2. **POSTING FLOOR CAPACITIES.**—Before any building hereafter erected is occupied, in whole or in part, as a business building, and before any building already erected but not heretofore occupied as a business building, is occupied or used, in whole or in part, for such purpose, the safe live load for each floor as approved by the superintendent of buildings shall be posted in a conspicuous place in the story to which it relates. When the safe live load for any existing floor, ascertained as hereinafter provided, has been approved by the superintendent of buildings, the owner or occupant shall post such approved live load in a conspicuous place or places on each story occupied for any of the purposes indicated in this section.

3. **LOADING OF FLOORS.**—No person shall place, or cause or permit to be placed on any floor of any building any greater load than the approved safe load.

4. **SAFES.**—No safe shall be placed on a stair landing or in a stair hall, nor shall its weight be carried by any beam which also carries the floor of any landing or stair hall.

ARTICLE 4

CLASSIFICATION OF BUILDINGS

(In Effect March 30, 1915)

Section 70. Occupancy.

71. Construction.

72. When buildings are required to be fireproof.

73. When buildings may be non-fireproof.

74. One story special buildings.

SEC. 70. OCCUPANCY. 1. CLASSES DESIGNATED.—For the purposes of this chapter all buildings or structures shall be classified with respect to occupancy and use, as public buildings, residence buildings and business buildings, as hereinafter specified and defined.

2. **PUBLIC BUILDINGS.**—Public buildings are buildings or parts of buildings in which persons congregate for civic, political, educational, religious or recreational purposes, or in which persons are harbored to receive medical, charitable or other care or treatment, or in which persons are held or detained by reason of public or civic duty, or for correctional purposes, including among others, court houses, schools, colleges, libraries, museums, exhibition buildings, lecture halls, churches, assembly halls, lodge rooms, dance halls, theatres, bath houses, hospitals, asylums, armories, fire houses, police stations, jails and passenger depots.

3. **RESIDENCE BUILDINGS.**—Residence buildings are buildings or parts of buildings in which sleeping accommodations are provided, except such as may for other reasons be classed as public buildings, including among others, dwellings, tenement houses, hotels, lodging houses, dormitories, convents, and studios and club houses having sleeping accommodations.

4. **BUSINESS BUILDINGS.**—Business buildings are buildings, or parts of buildings, which are not public buildings or residence buildings, including among others, office buildings, stores, markets, restaurants, warehouses, freight depots, car barns, stables, garages, factories, laboratories, smoke house, grain elevators and coal pockets.

5. **DOUBTFUL CLASSIFICATION.**—In case any building is not specifically provided for, or where there is any uncertainty as to its classification, its status shall be fixed by a rule promulgated by the superintendent of buildings.

6. **MIXED OCCUPANCY.**—In case a building is occupied or used for different purposes in different parts, the provisions of this chapter applying to each class of occupancy shall apply to such parts of the building as come within that class; and if there should be conflicting provisions, the requirements securing the greater safety shall apply.

SEC. 71. CONSTRUCTION. 1. CLASSES OF CONSTRUCTION.—For the purposes of this chapter all buildings or structures shall be classified, with respect to construction, as fireproof, non-fireproof and frame.

2. **FIREPROOF.**—Fireproof buildings or structures are those which are constructed throughout of materials that will resist the action of fire and are constructed as required in Article 17 of this chapter.

3. **NON-FIREPROOF.**—Non-fireproof buildings or structures are those which do not conform to the requirements for fireproof buildings or structures, but which are enclosed with walls of approved masonry or reinforced concrete.

4. **FRAME.**—Frame buildings or structures are those of which the exterior walls or any parts thereof are of wood, or which do not conform to the requirements for fireproof or non-fireproof buildings.

SEC. 72. WHEN BUILDINGS ARE REQUIRED TO BE FIREPROOF. 1. NEW BUILDINGS.—Every building hereafter erected shall be a fireproof building as follows:

a. Every public building over 20 feet high, in which persons are harbored to receive medical, charitable or other care or treatment, or in which persons are held or detained under legal restraint;

b. Every other public building over 40 feet in height, or exceeding 5,000 square feet in area;

c. Every residence building, except tenements, over 40 feet in height and having more than 15 sleeping rooms;

d. Every tenement house exceeding six stories or parts of stories as provided in the Tenement House Law;

e. Every residence building having more than 15 sleeping rooms and exceeding 2,500 square feet in area, unless divided by interior partition walls of approved masonry or reinforced concrete into sections of less than 2,500 square feet area;

f. Every other residence building over 75 feet in height;

g. Every business building used as a garage within the fire limits; every garage within the suburban limits exceeding 600 square feet in area or 15 feet in height, or not located as provided in Section 91 of this chapter; and every garage, outside these restricted areas, over 40 feet in height; except that garages not exceeding one story in height may have non-fireproof roofs, and garages not exceeding 2 stories in height may likewise have non-fireproof roofs, provided the same are covered on the inside with approved fire retarding material in all cases where motor vehicles, with volatile inflammable oil in their fuel tanks are stored or kept on the upper floor.

h. Every business building exceeding 50 feet in height, used as a garage, motor vehicle repair shop or oil selling station within the fire limits or the suburban limits.

i. Every building over four stories in height used as a factory as defined in the Labor Law;

j. Every building or structure within the fire limits or the suburban limits used as a grain elevator or a coal pocket;

k. Every business building over 75 feet in height;

1. Every business building within the fire limits or the suburban limits which exceeds an area of 7,500 square feet when located on an interior lot or when facing on only one street, or 12,000 square feet when facing on two streets, or 15,000 square feet when facing on three or more streets, provided that when any such building is equipped throughout with an approved system of automatic sprinklers, fireproof construction shall be required only when the areas exceed double those herein specified for the respective conditions, and provided also that when any such building is divided by approved interior fire walls, fireproof construction shall be required only when any undivided area exceeds 7,500 square feet. Buildings of greater areas than herein specified for the respective conditions may, considering location and purpose, be constructed non-fireproof by special permission of the superintendent of buildings, provided they do not exceed two stories in height.

2. ALTERATIONS. a. BY EXTENDING.—When any building now existing is to be enlarged by extending it on any side so that the enlarged building would exceed the limits of height or area specified in subdivision 1 of this section for a new building, the extension or enlargement shall be constructed fireproof, provided that, in case the existing building is not of fireproof construction, the existing and new portions of the building shall be separated by fire walls.

b. BY RAISING IN HEIGHT.—No building now existing shall be raised in height so as to exceed the limits of height specified in subdivision 1 of this section unless it is fireproof.

SEC. 73. WHEN BUILDINGS MAY BE NON-FIREPROOF. 1. NEW BUILDINGS.—Except when required by this article to be fireproof, or when permitted by Article 5 or Article 22 of this chapter to be frame, any building hereafter erected may be non-fireproof.

2. ALTERATIONS.—Except when required by this article to be fireproof, or when permitted by Article 5 or Article 30 of this chapter to be frame, any building which shall hereafter be enlarged in any manner may be non-fireproof.

3. SPECIAL FIRE PROTECTION.—In all non-fireproof buildings hereafter erected or hereafter altered or converted to be used as garages, motor vehicle repair shops or oil selling stations the columns and girders, unless of fireproof construction, and all wood floor and roof construction shall be covered and protected on all sides with such fire retarding materials and in such manner as may be prescribed by the rules of the Board of Standards and Appeals, except that when such buildings are not more than one story high, without basement or cellar, such protection shall not be required for the roof construction.

Existing non-fireproof buildings heretofore occupied as garages, motor vehicle repair shops or oil selling stations shall not be required to comply with the provisions of this subdivision, except as may be specifically provided in rules hereafter adopted by the Board of Standards and Appeals.

SEC. 74. ONE-STORY SPECIAL BUILDINGS.—Nothing in this article shall prohibit the use of sheet metal not less than No. 26 gauge in thickness or other approved incombustible weatherproof material as may be prescribed incombustible weatherproof material

of such character and thickness as may be prescribed by rules of the Board of Standards and Appeals for the exterior walls of any building, irrespective of occupancy or location, except when otherwise specifically prescribed by this chapter; provided that such building is not more than one story high above the curb or surrounding ground level, and that all sides, except for necessary window and door openings, and the roof of such buildings are of the same material and construction, and provided further that the area does not exceed 1,250 square feet and the side walls 15 feet in height.

ARTICLE 5

RESTRICTED AREAS

(In Effect March 30, 1915)

Section 90. Fire limits.

91. Suburban limits.
92. Enlarging buildings.
93. Repair of damaged buildings.
94. Moving buildings.
95. Buildings in process of construction.
96. Frame buildings permitted.

SEC. 90. FIRE LIMITS.—Except as otherwise specifically provided in this chapter, or as the same may be amended from time to time, no frame, wood or other combustible structure shall be hereafter built in the city within the following limits hereinafter referred to as the fire limits and no person shall maintain, occupy or use any such structure erected in violation of any provision of this ordinance:

1. IN THE BOROUGH OF MANHATTAN.—Beginning at a point on the North River at the Battery, and running thence northerly along the pierhead line to a point 100 feet north of the northerly side of Dyckman street; thence running easterly 100 feet north of and parallel to the northerly side of Dyckman street to a point 100 feet west of the westerly side of Seaman avenue; thence running northerly 100 feet west of and parallel to the westerly side of Seaman avenue to a point 100 feet south of the southerly side of West 215th street; thence running easterly 100 feet south of and parallel to the southerly side of West 215th street, to a point 100 feet west of the westerly side of Broadway; thence running northerly 100 feet west of and parallel to the westerly side of Broadway to the bulkhead line of the Harlem Ship Canal; thence easterly and southerly along the bulkhead line of the Harlem Ship Canal and the Harlem River to the Bronx Kills; thence easterly along the bulkhead line of the Bronx Kills to the East River; thence southerly along the East River to the east of Randall's, Wards and Blackwells Islands and along the pierhead line of the East River to the North River, at the place of beginning.

2. IN THE BOROUGH OF THE BRONX. a.—Beginning at a point on the eastern bulkhead line of the Harlem River at the intersection with the centre line of Washington Bridge, thence running easterly along the centre line of Washington Bridge to Aqueduct avenue, thence running northerly along the centre line of Aqueduct avenue to Featherbed lane, thence running northeasterly along the centre line of Featherbed lane to Macombs road, thence running southerly along the centre line of Macombs road to 174th street, thence running easterly along the centre line of 174th street to a point 100 feet west of the westerly side of Jerome avenue, thence running northerly 100 feet west of and parallel to the westerly side of Jerome avenue to Woodlawn road, thence running southeasterly along the centre line of Woodlawn road to a point 100 feet east of the easterly side of Jerome avenue, thence running southerly 100 feet east of and parallel to the easterly side of Jerome avenue to East 174th street, thence running easterly along the centre line of East 174th street to a point 100 feet west of the westerly side of Webster avenue, thence running northerly 100 feet west of and parallel to the westerly side of Webster avenue to a point 100 feet north of the northerly side of Gun Hill road, thence running easterly 100 feet north of and parallel to the northerly side of Gun Hill road to a point 100 feet west of the westerly side of White Plains road, thence running southerly across Gun Hill road to a point 100 feet south of the southerly side of Gun Hill road, thence running westerly 100 feet south of and parallel to the southerly side of Gun Hill road to the westerly line of the right of way of the New York and Harlem Railroad, thence running southerly along the westerly line of the right of way of the New York and Harlem Railroad to a point 100 feet north of the northerly side of Fordham road, thence running easterly 100 feet north of and parallel to the northerly side of Fordham road to the westerly boundary of Bronx Park, thence running southerly along the westerly boundary and easterly along the southerly boundary of Bronx Park to the Bronx River, thence running southerly along the centre line of the Bronx River to a point 100 feet north of the northerly side of Walker avenue, thence running easterly 100 feet north of and parallel to the northerly side of Walker avenue to a point 100 feet west of the westerly side of Morris Park avenue, thence running northeasterly 100 feet northwest

of and parallel to the northwesterly side of Morris Park avenue to a point 100 feet west of the westerly side of White Plains road, thence running northerly 100 feet west of and parallel to the westerly side of White Plains road to the northerly boundary line of the city, thence running easterly along said boundary line to a point 100 feet east of the easterly side of White Plains road, thence running southerly 100 feet east of and parallel to the easterly side of White Plains road to a point 100 feet south of the southerly side of Morris Park avenue, thence running southwesterly 100 feet southeast of and parallel to the southeasterly side of Morris Park avenue to a point 100 feet south of the southerly side of Walker avenue, thence running westerly 100 feet south of and parallel to the southerly side of Walker avenue to the Bronx River, thence running southerly along the centre line of the Bronx River to a point 100 feet north of the northerly side of Westchester avenue, thence running easterly 100 feet north of and parallel to the northerly side of Westchester avenue to the Eastern boulevard, thence running southerly across Westchester avenue to a point 100 feet south of the southerly side of Westchester avenue, thence running westerly 100 feet south of and parallel to the southerly side of Westchester avenue to the Bronx River, thence running southerly along the centre line of the Bronx River to the East River, thence running southeasterly along the East River, northwesterly along the Bronx Kills and northerly along the Harlem River to the point of beginning;

b. Also, beginning at a point on the boundary line between the boroughs of The Bronx and Manhattan in the bed of the old Spuyten Duyvil Creek 100 feet west of the westerly side of Broadway, thence running northerly 100 feet west of and parallel to the westerly side of Broadway to the city line, thence running easterly along the city line to the east side of Broadway, thence running southerly along the easterly side of Broadway to the northerly side of Van Courtlandt Park south, thence running easterly to a point 100 feet east of the easterly side of Broadway, thence running southerly 100 feet east of and parallel to the easterly side of Broadway to the boundary line between the boroughs of The Bronx and Manhattan, thence running westerly along said boundary line to the point of beginning.

3. IN THE BOROUGH OF BROOKLYN. a.—Beginning at the junction of Newtown Creek with the East River, thence running along Newtown Creek and the borough line between Brooklyn and Queens to Chauncey street, thence running southwesterly along the centre line of Chauncey street to Central avenue, thence running southeasterly along the centre line of Central avenue to the boundary line of Evergreen Cemetery, thence running southerly along the boundary line of Evergreen Cemetery to Highland boulevard, thence running northeasterly along the centre line of Highland boulevard to Highland Park, thence running southerly along the boundary line of Highland Park to Jamaica avenue, thence running easterly along the northerly side of Jamaica avenue to the borough line between Brooklyn and Queens, thence running southerly along said borough line to a point 100 feet south of the southerly side of Jamaica avenue, thence running westerly 100 feet south of and parallel to the southerly side of Jamaica avenue to a point 100 feet east of the easterly side of Norwood avenue, thence running southerly 100 feet east of and parallel to the easterly side of Norwood avenue to Atlantic avenue, thence running easterly along the centre line of Atlantic avenue to a point 100 feet east of the easterly side of Milford street, thence running southerly 100 feet east of and parallel to the easterly side of Milford street to a point 100 feet south of the southerly side of New Lots avenue, thence running westerly 100 feet south of and parallel to the southerly side of New Lots avenue to a point 100 feet south of the southerly side of Riverdale avenue, thence running westerly 100 feet south of and parallel to the southerly side of Riverdale avenue to a point 100 feet west of the westerly side of East 98th street, thence running northwesterly 100 feet west of and parallel to the westerly side of East 98th street to a point 100 feet south to the southerly side of Clarkson avenue, thence running westerly 100 feet south of and parallel to the southerly side of Clarkson avenue across Remsen avenue and continuing 100 feet south of and parallel to the southerly side of Clarkson avenue to a point 100 feet east of the easterly side of Flatbush avenue, thence running southerly 100 feet east of and parallel to the easterly side of Flatbush avenue to a point opposite the junction of Kings highway with Flatbush avenue, thence running westerly across Flatbush avenue to a point 100 feet west of the westerly side of Flatbush avenue, thence running northerly 100 feet west of and parallel to the westerly side of Flatbush avenue to a point 100 feet south of the southerly side of Church avenue, thence running westerly 100 feet south of and parallel to the southerly side of Church avenue to a point 100 feet southeast of the southeasterly side of 14th avenue, thence running southwesterly 100 feet southeast of and parallel to the southeasterly side of 14th avenue to a point 100 feet southwest of the southwesterly side of 60th street, thence running northwesterly 100 feet southwest of and parallel to the southwest side of 60th street to New York Bay, thence running northerly along the pierhead line of New York Bay, Gowanus Bay, Buttermilk Channel and the East River to the point of beginning;

b. Beginning at a point at the intersection of the Atlantic Ocean and W. 5th street, thence running northerly along the centre line of West 5th street to a point 100 feet north of the northerly side of Surf avenue, thence running westerly 100 feet north of and parallel to the northerly side of Surf avenue to West 8th street, thence running westerly along the southerly side of the right of way of the Norton's Point railroad to West 37th street, provided that at no point along said right of way shall these limits be taken at a distance less than 100 feet north of the northerly side of Surf avenue, thence running southerly along the centre line of

West 37th street to the Atlantic Ocean, thence running easterly along the shore line to the point of beginning.

4. IN THE BOROUGH OF QUEENS: a. Beginning at a point in the bulkhead line of the East River at its intersection with the centre line of Winthrop avenue, thence running southeasterly along the centre line of Winthrop avenue to a point 100 feet southeast of the southeasterly side of Steinway avenue, thence running southwesterly 100 feet southeast of and parallel to the southeasterly side of Steinway avenue to a point 100 feet north of the northerly side of Astoria avenue, thence running easterly 100 feet north of and parallel to the northerly side of Astoria avenue to the Old Bowery Bay road, thence running southerly along the centre line of the Old Bowery Bay road to Woodside avenue, thence running southerly along the centre line of Woodside avenue to Middleburg avenue, thence running westerly along the centre line of Middleburg avenue to Dickson street, thence running southerly along the centre line of Dickson street to a point 100 feet south of the southerly side of Greenpoint avenue, thence running westerly 100 feet south of and parallel to the southerly side of Greenpoint avenue to Borden avenue, thence running easterly along the centre line of Borden avenue to Laurel Hill boulevard, thence southwesterly along the centre line of Laurel Hill boulevard to Meeker avenue, thence running southerly along the centre line of Meeker avenue to Newtown Creek, thence along Newtown Creek to the East River, thence running northerly along the bulkhead line of the East River to the place of beginning; (Paragraph a, as amended November 9, 1915).

b. Beginning at a point on the borough line between Queens and Brooklyn intersected by a line distant 100 feet north of and parallel to the northerly side of Metropolitan avenue, thence running easterly 100 feet north of and parallel to the northerly side of Metropolitan avenue to a point 100 feet east of the easterly side of Fresh Pond road, thence running southerly 100 feet east of and parallel to the easterly side of Fresh Pond road to Myrtle avenue, thence running southerly along the Long Island Railroad to the borough line between Queens and Brooklyn, thence running northwesterly along said borough line to the point of beginning;

c. Beginning at a point on the borough line between Queens and Brooklyn 100 feet north of the northerly side of Jamaica avenue, thence running easterly 100 feet north of and parallel to the northerly side of Jamaica avenue, to Brenton avenue, thence running southerly across Jamaica avenue to a point 100 feet south of the southerly side thereof, thence running westerly 100 feet south of and parallel to the southerly side of Jamaica avenue to a point 100 feet east of the easterly side of Roseville avenue, thence running southerly 100 feet east of and parallel to the easterly side of Roseville avenue to Mandsley street, thence running westerly across Roseville avenue to a point 100 feet west of the westerly side thereof, thence running northerly 100 feet west of and parallel to the westerly side of Roseville avenue to a point 100 feet south of the southerly side of Jamaica avenue, thence running westerly 100 feet south of and parallel to the southerly side of Jamaica avenue to the boundary line between the boroughs of Queens and Brooklyn, thence running northerly along said boundary line to the place of beginning;

d. Beginning at a point on the centre line of Madison street, Flushing, 100 feet west of the westerly side of Main street, thence running northerly 100 feet west of and parallel to the westerly side of Main street to Jackson avenue, thence running easterly along the centre line of Jackson avenue to a point 100 feet east of the easterly side of Main street, thence running southerly 100 feet east of and parallel to the easterly side of Main street, to Madison street, thence running westerly along the centre line of Madison street to the point of beginning.

SEC. 91. SUBURBAN LIMITS.—Except as otherwise specifically provided in this chapter, no frame or wood structure shall be built hereafter within the following areas or limits hereinafter referred to as "Suburban Limits," and it shall be unlawful to maintain, occupy or use any such structure erected in violation of any of the provisions of this ordinance, provided, however, that nothing herein contained shall prevent the erection, maintenance or occupancy of any frame building to be used exclusively for residence purposes with not more than 15 sleeping rooms and covering not more than 85 per cent. of the width of the lot or plot on which it is erected, and maintaining on at least one side an open space or open spaces as may be necessary to preserve such restriction, or of any one-story frame stable or garage not exceeding 600 square feet in area or 15 feet in height and erected on the same plot with a one- or two-family building and maintained on all sides at least 4 feet from any lot line.

1. IN THE BOROUGH OF MANHATTAN, all that portion of the borough not included in the fire limits.

2. IN THE BOROUGH OF THE BRONX, all that portion of the borough lying between the fire limits and the following boundaries:

Beginning at the Hudson River and running easterly along the boundary line between the borough of The Bronx and Westchester county to a point 100 feet east of the easterly side of Barnes avenue, thence southerly 100 feet east of and parallel to the easterly side of Barnes avenue to a point 100 feet east of the easterly side of Bronxwood avenue, continuing southerly 100 feet east of and parallel to the easterly side of Bronxwood avenue to a point

100 feet south of the southerly side of Adece avenue, thence easterly 100 feet south of and parallel to the southerly side of Adece avenue to a point 100 feet east of the easterly line of Laconia avenue, thence southerly 100 feet east of and parallel to the easterly side of Laconia avenue to a point 100 feet south of the southerly side of Waring avenue, thence easterly 100 feet south of and parallel to the southerly side of Waring avenue to the centre of Givan's basin, thence southeasterly and easterly along the centre line of Givan's basin to Eastchester Creek, thence southeasterly and southerly through Eastchester Creek and Eastchester Bay to a line 100 feet south of and parallel with the southerly side of Waterbury avenue, thence westerly along a line running 100 feet south of and parallel to the southerly side of Waterbury avenue to Westchester Creek, thence southerly along the centre line of Westchester Creek to a point 100 feet south of the southerly side of Lafayette avenue, thence westerly 100 feet south of and parallel to the southerly side of Lafayette avenue to a point 100 feet west of the westerly side of White Plains road, thence northerly 100 feet west of and parallel to the westerly side of White Plains road to a point 100 feet south of the southerly side of Watson avenue, thence westerly 100 feet south of and parallel to the southerly side of Watson avenue to the Bronx River.

3. IN THE BOROUGH OF BROOKLYN, all that portion of the borough lying between the fire limits and the following boundaries: Beginning at the Atlantic Ocean on a line 100 feet east of and parallel to the easterly side of Ocean parkway, running thence northerly 100 feet east of and parallel to the easterly side of Ocean parkway to a point 100 feet south of the southerly side of Neptune avenue; thence easterly 100 feet south of and parallel to the southerly side of Neptune avenue, to a point 100 feet east of the easterly side of Coney Island avenue; thence southerly 100 feet east of and parallel to the easterly side of Coney Island avenue, to the Atlantic Ocean; thence easterly along the line up to the Atlantic Ocean to a point 100 feet east of the easterly side of Thornhill street (Manhattan Beach Estates), running thence northerly 100 feet east of and parallel to the easterly side of Thornhill street, continuing across Sheephead Bay till it intersects with a line drawn 100 feet north of and parallel to the northerly side of Emmons avenue, thence westerly 100 feet north of and parallel to the northerly side of Emmons avenue to a point 100 feet east of the easterly side of Batchelder street, thence northerly 100 feet east of and parallel to the easterly side of Batchelder street to a point 100 feet north of the northerly side of Avenue Z, thence westerly 100 feet north of and parallel to the northerly side of Avenue Z to a point 100 feet east of the easterly side of Ocean avenue; thence northerly 100 feet east of and parallel to the easterly side of Ocean avenue to a point 100 feet south of the southerly side of Avenue U, thence easterly 100 feet south of and parallel to the southerly side of Avenue U to a point 100 feet east of the easterly side of Nostrand avenue, thence northerly 100 feet east of and parallel to the easterly side of Nostrand avenue to a point 100 feet south of the southerly side of Avenue N, thence easterly 100 feet south of and parallel to the southerly side of Avenue N, to a point 100 feet west of the westerly side of East 35th street, thence southeasterly 100 feet southwest of and parallel to the southwest side of East 35th street to a point 100 feet southeast of the southeasterly side of Flatlands avenue, thence northeasterly 100 feet southeast of and parallel to the southeasterly side of Flatlands avenue to a point 100 feet east of the easterly side of Schenectady avenue, thence northerly 100 feet east of and parallel to the easterly side of Schenectady avenue to a point 100 feet south of the southerly side of Clarendon road, thence easterly 100 feet south of and parallel to the southerly side of Clarendon road to a point 100 feet southeast of the southeasterly side of Ditmas avenue, thence northeasterly 100 feet southeast of and parallel to the southeasterly side of Ditmas avenue to a point 100 feet northeast of the northeasterly side of East 98th street, thence northwesterly 100 feet northeast of and parallel to the northeasterly side of East 98th street to a point 100 feet south of the southerly side of Vienna avenue, thence easterly 100 feet south of and parallel to the southerly side of Vienna avenue to a point 100 feet east of the easterly side of Fountain avenue, thence northerly 100 feet east of and parallel to the easterly side of Fountain avenue to a point 100 feet south of the southerly side of Sutter avenue, thence easterly 100 feet south of and parallel to the southerly side of Sutter avenue to the boundary line of Queens Borough, excepting, however, the premises beginning at the Atlantic Ocean at the easterly side of Ocean avenue, running thence northerly along the easterly side of Ocean avenue to Oriental boulevard, thence easterly along the southerly side of Oriental boulevard to the westerly side of Irwin street; thence southerly along the westerly side of Irwin street to the Atlantic Ocean; thence along the Atlantic Ocean to the point of beginning.

SEC. 92. ENLARGING BUILDINGS.—Except as otherwise specifically provided in this chapter, or as the same shall be amended from time to time, no existing frame, wood or other combustible structure shall be enlarged within the fire limits, or suburban limits, except in conformity with the provisions of this chapter with respect to new structures.

SEC. 93. REPAIR OF DAMAGED BUILDINGS. 1. WHEN PROHIBITED.—Within the fire limits any existing frame, wood, or other combustible structures which, in the judgment of the superintendent of buildings of the borough, may be damaged from any cause whatsoever to an amount greater than one-half of the value thereof exclusive of the foundations or may be in need of structural repairs to an amount greater than one-half of its value exclusive of the foundations, shall not be repaired or rebuilt, but shall be taken down.

2. SURVEYS.—In case the owner or owners of the structure which may be damaged or in need of repairs shall be dissatisfied with the decision of the superintendent of buildings as to the extent of such damage or need of repairs, then the amount or extent of such damage or required repairs shall be determined by competent surveyors, one appointed by the superintendent of buildings, one by the owner or owners of the structure and, in case these two do not agree, one selected by them jointly. The report of the surveyors shall be reduced to writing and, when signed by any two of them, shall be conclusive. No building the subject of survey shall be in any manner repaired, altered or rebuilt until after the decision of the surveyors shall have been rendered.

SEC. 94. MOVING BUILDINGS.—No frame, wood or other combustible structure shall be moved from without to within the fire limits.

SEC. 95. BUILDINGS IN PROCESS OF CONSTRUCTION.—Nothing herein contained shall prevent the erection or completion of a frame structure for which a permit has been lawfully issued at the time this ordinance shall take effect within such portions of the fire limits as were not heretofore included within the fire limits of the city; provided the work thereon shall be diligently prosecuted so that the structure shall be completed within 15 months after the passage of this ordinance.

In case any such structure shall not be completed within the said period, the holder of the permit therefor shall be deemed to have forfeited all rights and privileges thereunder and the uncompleted building or structure shall be taken down and removed within 60 days after the date of the forfeiture of such permit.

SEC. 96. FRAME BUILDINGS PERMITTED.—If any block situated within the fire limits has 90 per cent. of the buildings erected thereon constructed of frame, any vacant lot situated therein may have a frame building placed or constructed thereon, provided the same be not more than 2 stories and basement in height and is to be used for residence purposes only.

ARTICLE 6

HEIGHT, SIZE AND ARRANGEMENT

(Not yet enacted)

Section 110.

ARTICLE 7

LIGHT AND VENTILATION

(In Effect March 14, 1916)

Section 130. Rooms in residence buildings.

131. Rooms in business buildings.

132. Rooms in public buildings.

133. Bathrooms and water-closet compartments.

134. Windows.

135. Courts.

136. Buildings on same plot.

137. Alterations.

SEC. 130. ROOMS IN RESIDENCE BUILDINGS. 1. WINDOWS REQUIRED.—Except as otherwise provided in this article or by any other law, every living room in every residence building hereafter erected shall have one or more windows opening directly upon a street or other open public space, or upon a court located upon the same lot or plot as the building and conforming to the requirements of this article for courts, provided that the width of such street or open public space is not less than required by this article for courts.

2. SIZE OF ROOMS.—Every such room shall be not less than six feet wide in any part, and shall contain not less than sixty square feet of clear floor area, and the clear height for this minimum floor area shall be not less than eight feet.

3. ALCOVE ROOMS.—Nothing in this section shall prohibit, in residence buildings occupied by not more than two families, rooms without windows as prescribed by subdivision 1 of this section, provided that every such room opens without obstruction directly into another room which has one or more windows having an aggregate area between stop beads of not less than twenty-four square feet and opening to the outer air as prescribed in subdivision 1 of this section, and that the opening between such rooms is not less than sixty square feet in area.

SEC. 131. ROOMS IN BUSINESS BUILDINGS.—Except as otherwise provided in this article, every room in every business building hereafter erected, other than rooms specifically provided for by the State Labor Law, shall, unless ventilated by windows opening directly upon a street or other open public space, or upon a court located on the same lot or plot as the building and conforming to the requirements of this article for courts, be provided with approved means of ventilation consisting of transoms or similar devices opening into rooms ventilated directly to the outer air or of other methods capable of maintaining a carbon dioxide content of the air of not more than one part in one thousand, provided that this requirement shall not apply to breweries or charging rooms, or other rooms where high quantities of carbon dioxide are an unavoidable concomitant of the use to which the room is put, or to rooms used exclusively for storage purposes, and provided further that the requirements of this section shall not apply to rooms in which the unoccupied space exceeds five hundred cubic feet for each occupant.

SEC. 132. ROOMS IN PUBLIC BUILDINGS.—Except as otherwise provided in this article or by any other law or ordinance, every room in every public building hereafter erected shall be equipped with some approved system of positive ventilation which, during occupancy, will provide not less than two cubic feet of fresh, uncontaminated air per minute for each square foot of floor surface, unless the unoccupied space of such rooms exceeds one thousand cubic feet for each occupant and windows are provided opening directly upon a street or other open public space, or upon a court located on the same lot or plot as the building and conforming to the requirements of this article for courts.

SEC. 133. BATHROOMS AND WATER-CLOSET COMPARTMENTS.—Every bathroom, toilet room or other room containing one or more water-closets or urinals, hereafter placed in any building, shall be ventilated in at least one of the following ways:—

a—by a window, opening to the outer air as prescribed in subdivision 1 of Sec. 130 and having, between stop beads, an area of not less than ten per cent. of the floor area nor less than three square feet in any case and a width of not less than one foot;

b—by a window of the size specified in a, opening on a vent shaft which extends to and through the roof or into a court conforming to the requirements of this article for courts and which has a cross-sectional area of not less than one-fifth of a square foot for every foot of height but not less than nine square feet in any case, and, unless open to the outer air at the top, a net area of louver openings in the skylight equal to the maximum required shaft area;

c—by an individual vent flue or duct extending independently of any other flue or duct, to and above the roof and having a cross-sectional area of not less than one square foot for two or less water-closets or urinal fixtures and one-third of a square foot additional for each additional water-closet or urinal fixture;

d—by a skylight in the ceiling, having a glazed surface of not less than three square feet and arranged so as to provide ventilating openings of not less than three square feet to the outer air above the roof of the building or into a court conforming to the requirements of this article for courts, for two or less water-closets or urinal fixtures and two square feet additional for each additional water-closet or urinal fixture; or

e—by some approved system of mechanical exhaust ventilation of sufficient capacity to provide not less than four changes of air per hour.

SEC. 134. WINDOWS.—All windows, except windows provided for in Sec. 133 of this article, placed in any room of a residence building hereafter erected for the purpose of complying with the requirements of this article, shall have an aggregate area between stop beads of not less than one-tenth of the floor area of the room served thereby. Such windows shall be so arranged that when fully opened the total open space shall be not less than fifty per cent. of the total required window space.

SEC. 135. COURTS.—In every building hereafter erected every court provided under the provisions of this article for the lighting and ventilation of any room shall have a width at every point of not less than one inch for every foot that such point is distant from the lowest part of such court, but not less than four feet in any case. Every such court shall be open and unobstructed for the required widths from its lowest point to the sky, except for the ordinary projections of window sills, belt courses and similar ornamental projections to the extent of not more than four inches. When a court is located along a side of a lot or plot the lot line shall be deemed an enclosure of such court, except that when a court opens on a street or open public space, such street or open public space may be considered as part of that court.

SEC. 136. BUILDINGS ON THE SAME PLOT.—If more than one building is hereafter placed on any lot or plot, or, if any building is placed on the same lot or plot with an existing building, the several buildings may, for the purposes of this article, be considered as a single building. Any structure, whether independent or attached to a building, shall for the purpose of this article, be deemed a building or part of a building.

SEC. 137. ALTERATIONS.—No building shall hereafter be altered so as to reduce either the size of any room or the amount of window space, to less than that required for buildings hereafter erected, or so as to create any additional room or rooms unless such additional room is made to conform to the requirements for rooms in buildings hereafter erected except that such rooms may be of the same height as existing rooms in the same story. No building shall hereafter be enlarged nor shall the lot or plot on which it is located be diminished so that the dimensions of any court required for light or ventilation as in this article provided, shall be less than prescribed for buildings hereafter erected.

ARTICLE 8

EXIT FACILITIES

(In Effect March 14, 1916)

- Section 150. Definitions. a.
 151. Application of article.
 152. Exits.
 153. Interior stairs.
 154. Exterior stairs.
 155. Fire towers.
 156. Horizontal exits.
 157. Hallways.
 158. Doorways.
 159. Miscellaneous requirements.
 160. Alterations.
 161. Existing buildings.
 162. Fire escapes.

SEC. 150. DEFINITIONS.—For the purpose of this article:—

a—a floor area is any floor space enclosed on all sides by either the exterior walls, fire walls, or fire partitions;

b—a stair exit is a direct connection of any floor area to a stairway constructed in accordance with the requirements of this article for required stairs;

c—a horizontal exit is the connection of any two floor areas, whether in the same building or not, by means of a vestibule, or by an open air balcony or bridge, or through a fire partition or fire wall;

d—the term “sprinklered” means equipped with an approved system of automatic sprinklers throughout the building, and the term “unsprinklered” means not so equipped.

SEC. 151. APPLICATION OF ARTICLE.—Unless otherwise specifically stated in this article, the provisions thereof shall apply to buildings hereafter erected, except tenement houses coming under the provisions of the Tenement House Law, factories coming under the provisions of the Labor Law, motion picture theatres coming under the provisions of article 24 of this chapter, theatres and other places of amusement coming under the provisions of article 25 of this chapter, and residence buildings occupied exclusively by one or two families or having not more than fifteen sleeping rooms.

SEC. 152. EXITS. 1. KIND.—Every building hereafter erected shall have one or more exits as required in this section, consisting of interior or exterior stairs, fire towers, or horizontal exits, constructed and arranged as specified in this article, with the necessary hallways and doorways.

2. NUMBER OF OCCUPANTS.—For the purpose of this article, when the number of persons to be accommodated by the exits is not stated in the application for a permit to construct, such number of persons within any floor area shall be taken, according to the use of such floor area, as one person.

a—for every ten square feet in dance halls, lodge rooms and places of assembly;

b—for every fifteen square feet in court rooms, restaurants and classrooms in schools and colleges;

c—for every twenty-five square feet in stores, markets, lodging houses and reading rooms;

d—for every thirty-two square feet in workrooms;

e—for every fifty square feet in offices and show rooms;

f—for every one hundred square feet in hospitals, hotels, asylums, furnished room houses, studios and other residence buildings;

g—for every one hundred and fifty square feet in warehouses and garages.

It shall be unlawful to occupy any floor area by a greater number of persons than that for which exits have been provided in accordance with this article.

3. NUMBER.—a. From rooms. Every room having an occupancy of more than seventy-five persons shall have at least two doorways, remote from each other, leading to an exit or exits.

b—from ground floor. Every floor area having direct exit by doorways or hallways to a street and having an occupancy of more than seventy-five persons, shall have at least two means of exit.

c—from floor areas. Every other floor area above or below the ground floor shall have at least one interior stairway or fire tower connected thereto. Every such floor area shall have at least one additional exit when it exceeds two thousand five hundred square feet in area.

d—Fire towers required. In business buildings exceeding eighty-five feet in height, at least one stairway shall be a fire tower, provided that in sprinklered buildings in which two or more stairways are required under the provisions of this article, such fire tower shall not be required unless the building exceeds one hundred and twenty-five feet in height.

4. LOCATION.—Exits shall be so located that no point in any floor area served by them shall be more than one hundred feet distant along the line of travel from an exit, except that when any floor area is subdivided into small areas, such as rooms in hotels and office buildings, the distance from the door of any such room, along an unobstructed hallway, to an exit, shall be not more than one hundred and twenty-five feet. Where more than one exit is required to any floor area, the exits shall be placed remote from each other.

5. STAIRWAY EXITS.—Every required stairway shall lead to a street. At least one stairway shall continue to the roof, and when there are more than two stairways, at least two shall continue to the roof.

6. ENGINEERS' LADDERS.—Every building, including tenement houses, factories, theatres and motion picture theatres, in which high pressure steam boilers are placed below the curb level shall have stationary iron ladders or stairs from such story leading directly to a manhole through the sidewalk or other outside exit, unless exit is provided by an enclosed stairs or a horizontal exit.

SEC. 153. INTERIOR STAIRS. 1. CONSTRUCTION.—a. Strength. All stairs, platforms, landings and stair halls shall be of sufficient strength to safely sustain a live load of not less than one hundred pounds per square foot.

b. Materials. All stairs and stairways serving an exit shall be constructed of incombustible material throughout except in frame and non-fireproof buildings not exceeding forty feet in height and occupied by not more than fifty persons above the first story, and except when the stairs are enclosed in fireproof partitions, in frame and non-fireproof buildings not exceeding fifty feet in height.

c. Support for treads and landings. When treads or landings are of slate, marble, stone or composition, they shall be supported for their entire length and width by a solid steel plate at least one-eighth of an inch thick, securely fastened. When stairs are of fireproof construction, the treads and landings may be solidly supported for their entire length and width by the materials of which such stairs are constructed. The treads and landings shall be constructed and maintained in such manner as to prevent persons from slipping thereon.

2. WHEN TO BE ENCLOSED.—a. Fireproof enclosures. In buildings exceeding forty feet in height or occupied by more than fifty persons above the first story, interior required stairways shall be enclosed with fireproof partitions or walls of approved masonry.

b. Non-fireproof enclosures. In buildings not exceeding forty feet in height and occupied by not more than fifty persons above the first story, interior required stairways which are not enclosed in fireproof partitions or wall of approved masonry shall be enclosed in partitions of wood studs firestopped at every story with incombustible material and wire-lathed or covered with approved plaster boards on both sides, and in each case plastered with at least one-half of an inch of mortar on all exposed surfaces, or of other approved equally slow-burning material and construction.

c. Stairs of ornamental character. Nothing in this section shall require the enclosure of the flight of a required stairs, when ornamental in character, from the main entrance floor to the floor next above, provided that such stairs are not the only required stairs, that all other required stairs in the same story are enclosed as in this section prescribed, and that some other required stairs is accessible from the upper part of the stairs in question.

d. Open stair wells. Except as in this section otherwise provided, not more than two stories in any building shall be connected by an open well or unenclosed stairway.

e. Openings in enclosures. No openings shall be permitted in the stair enclosures required by this section, other than doorways, and such windows as are necessary for proper lighting. The doorways shall be equipped with approved self-closing fire doors, except that in non-fireproof enclosures, substantial self-closing hardwood, metal or metal covered doors

may be used. Windows opening on the interior of the building shall be stationary fire windows.

3. **WIDTH.**—No stair or stairway required by this article as an exit shall have an unobstructed width of less than forty-four inches throughout its length, except that hand-rails may project not more than three and one-half inches into such width. The aggregate width of stairs in any story of the building shall be such that the stairs or the stairway may accommodate at one time the total number of persons ordinarily occupying or permitted to occupy the largest floor area served by such stairs or stairways above the flight or flights of stairs under construction, on the basis of one person for each full twenty-two inches of stair width and one and one-half treads on the stairs, and one person for each three and one-half square feet of floor area on the landings and halls within the stairway, provided that the number of persons to be accommodated as herein provided may be assumed at one-half of such total number of persons ordinarily occupying or permitted to occupy any floor area when the building is sprinklered and at one-third of such total number when a horizontal exit is provided in accordance with this article, and at one-fourth of such total number when the building is sprinklered and a horizontal exit is provided.

4. **TREADS AND RISERS.**—Except where winders are permitted the treads and risers of stairs shall be so proportioned that the product of the tread, exclusive of nosing, and the riser, in inches, shall be not less than seventy nor more than seventy-five, but risers shall not exceed seven and three-quarter inches in height and treads, exclusive of nosing, shall be not less than nine and one-half inches wide. Treads other than winding treads, and risers, shall be of uniform width and height in any one flight. The use of winders is prohibited, except for stairs of an ornamental character, having a width of not less than five feet. The treads of winders, exclusive of the nosings, shall have a width of not less than seven inches at any point nor more than ten inches average width.

5. **LANDINGS.**—No flight of stairs shall have a vertical rise of more than twelve feet between floors or landings, provided that in stairs serving as an exit from places of assembly such vertical rise shall not exceed eight feet. The distance between risers on landings in straight runs of stairs shall be not less than forty-four inches.

6. **HAND RAILS.**—Stairs shall have walls or well secured balustrades or guards on both sides, and shall have hand-rails on both sides. When the required width of a flight of stairs exceeds eighty-eight inches, an intermediate hand-rail, continuous between landings, substantially supported and terminated at the upper end in newels or standards at least six feet high, shall be provided.

7. **SPACE UNDER STAIRS.**—The space under any stairs built in whole or in part of combustible materials shall be left entirely open and kept clear and free from encumbrance.

SEC. 154. EXTERIOR STAIRWAYS.—Required stairs which may be permitted on the outside of a building shall be constructed of incombustible materials and shall conform in other respects, except as to enclosure, to the requirements of this article for interior stairs. Exterior stairs shall be connected to each story which they serve by means of self-closing fire doors. Doors and windows opening on such stairs shall be protected by approved self-closing fire doors or automatic fire windows. Metal mesh or other rigid guards at least six feet high shall be provided on each unenclosed side of such stairways throughout.

SEC. 155. FIRE TOWERS.—Interior stairways constructed and arranged as follows shall be known as fire towers. The enclosing walls shall be of brick or reinforced concrete not less than eight inches thick, and without openings, except for doors or windows opening on a street, or on a yard or court not less than one hundred square feet in area. Access to the stairway shall be provided at each story served by a fire tower through outside balconies or fireproof vestibules having solid floors or incombustible materials and provided with substantial railings. Such balconies or vestibules shall be level with the floors of the buildings and platforms of the stairs connected by them, and shall be separated therefrom by self-closing fire doors. The clear width of such connecting balconies and vestibules shall be not less than that required for a hallway. The stairs in fire towers shall comply in all respects with the requirements of this article relating to interior stairs.

SEC. 156. HORIZONTAL EXITS.—No horizontal exit shall be deemed satisfactory under this article unless the floor area on either side of such horizontal exit is sufficient to hold the joint occupancy of both floor areas, allowing not less than three and one-half square feet of clear floor space per person, and at least one interior stairway or fire tower conforming to the requirements of this article is provided on each side of such horizontal exit. When vestibules or open air balconies are used they shall conform to the requirements for vestibules or open air balconies of fire towers. When bridges are used they shall be constructed of incombustible material. All doorways or windows opening on such vestibules, balconies or bridges shall be equipped with self-closing fire doors or automatic fire windows. Where there is a difference in level between the connected floor areas, gradients shall be provided of not more than one foot in ten feet.

SEC. 157. HALLWAYS.—When serving as an exit from or in connection with one or more stairways, the clear width of any hallway or passageway shall be not less than the aggregate required clear width of all stairs leading to it. The clear width of every hallway or passageway leading to an exit shall be not less than forty-four inches for the first fifty persons to be accommodated thereby, and six inches additional for each additional fifty persons or fraction thereof; when the number of persons to be accommodated thereby is less than fifty, the clear width of such hallway or passageway shall be not less than thirty-six inches.

SEC. 158. DOORWAYS. 1. WIDTH.—The aggregate clear width of doorways serving as an exit from any room or floor area to a hallway, stairs or other means of exit, shall be not less than thirty-six inches for the first fifty persons to be accommodated thereby, and six inches additional for each additional fifty persons or fraction thereof. The aggregate clear width of doorways serving as an exit from any stairway, hallway or passageway, shall be not less than the required width for such stairway, hallway or passageway. No single exit doorway shall have a clear width of less than thirty inches, provided that, when the total number of persons to be accommodated exceeds fifty the clear width shall be not less than thirty-six inches.

2. HANGING OF DOORS.—The doors of any doorway required by this section shall be so hung and arranged that when opened they shall not in any way obstruct the required width of hallway, stairs, or other means of exit, and, in the case of doorways leading directly to a street, shall not, in any position, project more than eighteen inches beyond the building line. Doorways serving as exits to a street from required stairways of any building, or to a yard, court or open passageway communicating with a street, shall have the doors, including the doors of vestibules, so hung as to swing outwards when opening; but this requirement shall not be construed to prohibit the use of doors swinging both inwards and outwards, nor of sliding doors in stables and garages, and in the shipping and receiving rooms of business buildings.

3. DOOR FASTENINGS.—The fastening on any exit door within the scope of this section shall be such that the door may be readily opened from the inside without the use of keys, provided that this requirement shall not apply to the doors of rooms where persons are under legal restraint.

SEC. 159. MISCELLANEOUS REQUIREMENTS. 1. EXIT SIGNS.—All exits from floor areas accommodating more than fifty persons shall be plainly marked by approved exit signs and red lights.

2. LIGHTING.—Provision shall be made for the adequate lighting by artificial light of all stairways, hallways and other means of exit required by this article.

3. EXITS TO BE KEPT CLEAR.—No doorway, hallway, passageway, stairs, or other means of exit, required by this article, shall be obstructed or reduced except as to hand-rails, beyond its required width in any manner whatsoever.

SEC. 160. ALTERATIONS.—No building shall hereafter be altered so as to reduce the number or capacity of exits to less than required for buildings hereafter erected. No exits hereafter installed in any building shall be installed in conformity to the requirements for exits in new buildings, unless such exits are installed to comply with a notice issued under the provisions of Sec. 161 of this article.

SEC. 161. EXISTING BUILDINGS.—Every building now existing which is not provided with exit facilities as prescribed in this article for new buildings and in which the exit facilities are inadequate for the safety of the occupants, shall be provided with such good and sufficient fire escapes, stairways or other means of egress in case of fire as shall be directed by the superintendent of buildings; and said superintendent shall have authority within said city to direct fire escapes and other means of egress to be provided upon and within such buildings or any of them, except as may be otherwise provided by law. If the owner of any building affected by any order issued under this section, or his agent, shall, within forty-eight hours, Sundays and holidays excluded, after personal service of such order has been made, file with the superintendent of buildings a written appeal for such order, the superintendent of buildings shall appoint a board of survey, as provided for in Sec. 633 of this chapter for unsafe buildings, upon whose findings a new order shall be based and issued.

SEC. 162. FIRE ESCAPES. 1. CONSTRUCTION.—All fire escapes hereafter erected shall be constructed of incombustible materials and of sufficient strength to safely sustain a superimposed load of one hundred pounds per square foot. The owner or lessee of any building upon which a fire escape is erected shall keep the same in good repair.

2. INCUMBERING FIRE ESCAPES.—No person shall at any time place any incumbrance of any kind whatsoever before or upon any fire escape, balcony or ladder.

3. NOTICE AGAINST INCUMBRANCES.—In constructing all balcony fire escapes, the manufacturer thereof shall securely fasten thereto, in a conspicuous place, a metal plate

having suitable raised letters on the same, to read as follows: "Notice: Any person placing any incumbrance on this balcony is liable to a penalty of \$10 and imprisonment for ten days."

4. **DUTY OF FIREMEN AND POLICEMEN.**—Any fireman and policeman who shall discover any fire escape, balcony or ladder of any fire escape incumbered in any way shall forthwith report the same to the commanding officer of his company or precinct, who shall forthwith cause the occupant of the premises or apartment to which said fire escape, balcony or ladder is attached, or for whose use the same is provided, to be notified, either verbally or in writing, to remove such incumbrance and keep the same clear.

5. **PUNISHMENT FOR VIOLATION.**—If said notice shall not be complied with the removal forthwith of such incumbrance, and keeping said fire escape, balcony or ladder free from incumbrance, then the said commanding officer shall apply to the nearest police magistrate for a summons for the occupant of the said premises or apartment of which the fire escape forms a part, and, on conviction, the said occupant shall be fined not more than ten dollars for each offense, or may be imprisoned not to exceed ten days, or both, in the discretion of the Court.

ARTICLE 9

PROJECTIONS BEYOND BUILDING LINE

(In Effect March 14, 1916)

Section 170. Restrictions.

171. Permits revocable.

172. Alterations.

173. Existing encroachments.

174. Action of Board of Estimate and Apportionment.

SEC. 170. RESTRICTIONS. 1. GENERAL.—Except as hereinafter otherwise provided in this article no part of any building hereafter erected, or of any enlargement of an existing building shall project beyond the building line so as to encroach upon a public street or public space.

2. **PROJECTIONS REMOVABLE.**—Any part of a building permitted to project beyond the building line under the provisions of this article shall be so constructed that its removal may be made at any time without causing the building or any part thereof to become structurally unsafe.

3. **STRUCTURAL SUPPORT.**—No part of any building hereafter erected or of any enlargement of an existing building that is necessary for the structural safety of the building or an enlargement thereof shall project beyond the building line so as to encroach upon a public street or public space, but this shall not be deemed to prohibit the projection beyond the building line to the extent of not more than twelve inches of the footings of street walls provided such projecting parts of footings are not less than eight feet below the sidewalk level.

4. **PERMISSIBLE PROJECTIONS.**—a. Areas, meaning thereby open spaces below the ground level immediately outside the building and enclosed by substantial walls, may project beyond the building line not more than one-fifteenth of the width of the street, but not more than five feet, except where entirely prohibited by Sec. 160 of chapter 23 of the Code of Ordinances, provided, however, that every such area shall be covered over at the street level by an approved grating of metal or other incombustible material of sufficient strength to carry safely the pedestrian street traffic.

b. Steps, leading up or down at entrances and included between ornamental columns, pilasters or cheek pieces at least three feet high on the sides of such entrances, may project beyond the building line not more than two and one-half per cent. of the width of the street, but not more than eighteen inches in any case, except where prohibited entirely by Sec. 160 of chapter 23 of the Code of Ordinances, provided that the aggregate width of such steps shall not exceed twenty per cent. of the actual street frontage of any one building, when such frontage is twenty-five feet or more nor more than five feet when such frontage is less than twenty-five feet.

c. Columns, pilasters and ornamental projections, including their mouldings and bases, erected purely for the enhancement of the beauty of the building from an artistic standpoint, may project beyond the building line not more than two and one-half per cent. of the width of the street, but not more than eighteen inches in any case.

d. Balustrades of an ornamental character including the sills and brackets on which they rest, may project beyond the building line not more than five per cent. of the width of the street nor more than twenty-two inches in any case, provided that every part of such balustrade is not less than ten feet above the sidewalk.

e. Mouldings, belt courses, cornices, lintels, sills, pediments and similar projections of a decorative character may project beyond the building line not more than one and one-fourth per cent. of the width of the street nor more than ten inches in any case.

f. The main cornice, meaning thereby a moulded projection at or near the top of the street wall, may project beyond the building line not more than 5 per cent. of the width of the street nor more than five feet in any case, provided such main cornice is not less than twelve feet above the sidewalk at any point.

g. Base courses may project beyond the building line not more than $1\frac{1}{4}$ per cent. of the width of the street nor more than ten inches in any case, provided they do not extend more than five feet above the highest point of the sidewalk.

h. Rustications and quoins may project beyond the building line not more than four inches.

i. Awnings and marqueises, extending wholly or in part across the sidewalk, in connection with entrances to buildings, shall not be less than ten feet above the sidewalk at all points, except where prohibited by section 160 of chapter 23 of the Code of Ordinances, provided they are constructed of iron and glass or other incombustible materials, and securely supported from the building, and are properly drained, and provided further that, except on streets that may by ordinance be designated as market streets, no awning or marquee shall extend along the street wall of a building for more than 75 per cent. of the length of such wall, nor, in any case, more than fifty feet, and there shall be a clear distance of not less than four feet between any two awnings on the same building.

j. Fire escapes and balconies to fire towers or other required exits, constructed of steel or other incombustible material, when required on the fronts of buildings, may project beyond the building line not more than four and one-half feet, but no part of such fire escapes or balconies shall be less than ten feet above the sidewalk, provided that nothing in this section shall prevent the use of movable ladders or stairs to the sidewalk, so arranged that they are within ten feet of the sidewalk only when in actual use.

k. Vaults, entirely below the sidewalk level and conforming to the requirements of article 17, chapter 23 of the Code of Ordinances, shall not extend beyond the curb line. Openings in the roofs of vaults, between the building line and curb, shall be provided with substantial covers, flush in all parts with the sidewalk, of incombustible material, and so constructed and maintained as to be normally kept closed and when open thoroughly safeguarded, and to prevent persons from slipping thereon.

l. Hose connections for interior fire extinguishment equipments and fresh air inlets for plumbing systems may project through a street wall not more than twelve inches beyond the building line, except that where there is an angle formed by the street wall and a check piece or the base of a column, pilaster or ornamental projection, provided as in this section specified, they may be so located that no part extends more than fifteen inches from either side of such angle.

5. RULES GOVERNING PROJECTIONS.—Nothing in this article shall be deemed to abridge the powers and duties of the borough presidents or the commissioners of parks within their respective jurisdictions, to adopt additional rules as may be necessary with respect to the construction or disposition of parts of buildings projecting beyond the building line. The borough presidents or commissioners of parks may, when deemed necessary or desirable, fix further restrictions as to the extent of projections beyond the building line, but no projection greater than in this article specified shall be permitted.

SEC. 171. PERMITS REVOCABLE.—Any permission, express or implied, to construct part of a building so as to project beyond the building line, under the provisions of this article, is revocable by the Board of Aldermen or the Board of Estimate and Apportionment at will.

SEC. 172. ALTERATIONS.—No alterations or enlargements shall be made to any existing part of a building now projecting beyond the building line, except in conformity with the provisions of this article so far as it affects new construction.

SEC. 173. EXISTING ENCROACHMENTS.—Such parts of buildings which already project beyond the building line may be maintained as constructed until their removal is directed by the Board of Aldermen or the Board of Estimate and Apportionment, provided, however, that nothing contained in this article shall be deemed to abridge the right of the City of New York, or any of its officers, to continue any action for the removal of any unauthorized projection beyond the building line or for the collection of any penalty heretofore incurred in connection therewith.

SEC. 174. ACTION OF BOARD OF ESTIMATE AND APPORTIONMENT.—Nothing in this article shall be deemed to authorize any projection beyond the building line on those streets on which the removal of projections has been heretofore or may be hereafter directed by the Board of Estimate and Apportionment, except in conformity to resolutions by such Board.

ARTICLE 10

SAFEGUARDS DURING CONSTRUCTION OR DEMOLITION

(In Effect February 9, 1916)

Section 190. Enforcement of article.

191. Sidewalk sheds.
192. Temporary fence.
193. Roofs and skylights of adjoining buildings.
194. Scaffolding.
195. Floors to be filled in or covered over.
196. Protection of floor openings.
197. Weather protection.
198. Cellar drainage.
199. Overloading prohibited.
200. Precautions during demolition.

SEC. 190. ENFORCEMENT OF ARTICLE.—Except as may be otherwise provided by any law or ordinance, the provisions of this article shall be enforced by the superintendent of buildings, and all safeguards required by the provisions of this article or by any rules authorized thereunder shall be subject to the supervision of the bureau of buildings. The superintendent of buildings shall, from time to time, adopt such rules, consistent with the provisions of this article, as may be necessary to secure fully the protection of persons and property. In case any safeguard shall be provided as prescribed by this article, the superintendent of buildings shall cause a notice to be served personally upon the persons whose duty it may be to provide the same or upon the owners of the buildings affected, requiring such safeguard and specifying the manner in which the same shall be erected. If such safeguard is not provided as required in such notice, within three days after the service thereof, the superintendent of buildings shall have full power and authority to provide or cause the same to be provided as herein specified. All expenses connected with same may become a lien on the property inclosed or protected, which lien may be created and enforced in the same manner as now provided in Sec. 652 of this chapter.

SEC. 191. SIDEWALK SHEDS.—Whenever any building or part thereof, within ten feet of the building line, is to be erected or raised to exceed forty feet in height, or whenever such a building more than forty feet in height is to be demolished, the owner or the person doing or causing such work to be done shall erect and maintain during such work a substantial shed over the sidewalk in front of said building and extending, so far as practicable, from building line to curb. Such shed shall remain in place until the building is enclosed, or, in case of a demolition, until the building has been reduced to twenty feet in height. Every such shed shall be kept properly lighted at night.

SEC. 192. TEMPORARY FENCE.—In any building operation that does not require a sidewalk shed as provided in Sec. 191 of this article, the owner or person doing or causing such work to be done, shall, unless relieved by a general rule of the superintendent of buildings or a special permit from him, erect and maintain in front of the building during such building operation, a substantial fence not less than eight feet high, of wood or other suitable material. Such fence may extend not more than six feet into the highway, and shall be built solid for its full length except for such openings, provided with sliding doors or doors swinging inwards, as may be necessary for a proper prosecution of the work.

SEC. 193. ROOFS AND SKYLIGHTS OF ADJOINING BUILDINGS.—When any building is to be carried above the roof of an adjoining building, proper means for the protection of the skylights and roof of such adjoining building shall be provided, at his own expense, by the person constructing or causing the construction of such building, provided that if the owner, lessee or tenant of the adjoining building should refuse permission to have the roof and skylights so protected, the responsibility and expense for the necessary protection shall devolve on the person refusing this permission.

SEC. 194. SCAFFOLDING.—All scaffolds used in connection with the erection, alteration or demolition of any building shall be constructed in a manner to secure the safety of the workmen on them and of all persons passing under or near them. All scaffolds used on or about buildings at a height of more than twenty feet above the street or ground level, or a floor, except scaffolding wholly within the interior of a building and covering the entire floor space of any room therein, shall be provided along the outer edges and ends with substantial railings or enclosures of wire mesh or other suitable material, extending at least three feet above the working platform.

SEC. 195. FLOORS TO BE FILLED IN OR COVERED OVER.—If the floors of any building are to be of fireproof construction the floor filling shall be completed as the building progresses. If the floor consists of wood beams the underflooring, when double flooring

is to be used, shall be laid on each story as the building progresses; when double floors are not to be used, the floors two stories below the story where the work is being performed shall be kept planked over. If the floor beams are of iron or steel, the entire tier of iron or steel beams on which the structural iron or steel work is being erected, except such spaces as may be reasonably required for the proper construction of such iron or steel work, and for the raising or lowering of materials to be used in the construction of such building, or such spaces as may be designated by the approved plans for stairways and shafts shall be thoroughly planked over.

SEC. 196. PROTECTION OF FLOOR OPENINGS.—All floor openings, within a building in the course of construction shall be enclosed or fenced in on all sides by a barrier of suitable height, except on those sides which may be used for the handling of materials hoisted through such openings, or at which stairs or ladders land, provided, that such sides, other than landings, shall be guarded by an adjustable barrier not less than three nor more than four feet from the floor and not less than two feet from the edge of such opening.

SEC. 197. WEATHER PROTECTION.—Whenever permission has been given under any of the provisions of this chapter to enter any adjoining building the person who receives such permission or who is responsible for the work requiring such permission, shall provide for such adjoining adequate protection against the weather.

SEC. 198. CELLAR DRAINAGE.—Before the foundation walls of any building are completed provision shall be made to prevent water accumulating in the excavation or cellar to the injury of the foundation, and if there is a sewer in the street the cellar shall also be connected therewith.

SEC. 199. OVERLOADING PROHIBITED.—No building or part thereof, or any temporary support or scaffolding in connection therewith, shall be loaded during erection, alteration or demolition in excess of its safe carrying capacity.

SEC. 200. PRECAUTIONS DURING DEMOLITION.—In demolishing any building or part thereof, story after story shall be completely removed. No material shall be stored upon a floor of any building in the course of demolition, but old material shall be lowered to the ground immediately upon displacement. The material to be removed shall be properly wet to lay the dust incident to its removal.

ARTICLE 11

PARTITION FENCES AND WALLS

(In Effect March 30, 1915)

Section 210. Construction and maintenance of fences.

- 211. Retaining walls.
- 212. Regulation of lots.
- 213. Neglect to maintain.
- 214. Disputes.
- 215. Enforcement.

SEC. 210. CONSTRUCTION AND MAINTENANCE OF FENCES.—All partition fences, unless erected under some special agreement, shall be so built that the dividing line between the properties shall run through the center of such fence in each case, and they shall be built and maintained at the joint expense of the owners of the land on each side.

SEC. 211. RETAINING WALLS. 1. TO CONFORM TO STREET REGULATION.—When the regulation of a lot, in conformity with the street or streets on which it is situated, shall require the ground on such lot to be raised and kept higher than the ground of the adjoining lot or lots (provided the ground of such adjoining lot or lots is not maintained at a grade lower than in conformity with the street or streets on which they are situated) and a retaining wall for supporting the same shall be necessary, such retaining wall shall be made and maintained jointly by the owners of the land each side and shall stand one-half upon the land of each owner; but if the owner of the lot or lots having the lower grade shall bear and discharge the entire cost and expense of the making, such retaining wall shall be built entirely upon the lot having the higher grade and shall thereafter be maintained jointly by the owners of the land on both sides thereof.

2. TO SUPPORT ADJOINING EARTH.—Where an excavation has been made or a fill placed on any lot, but, as the case may be, not below or above the legal grade in conformity with the street on which that lot fronts, and the land adjoining it has no building or permanent structure thereon, other than frame sheds or structures of like character, and where a retaining wall shall be necessary to support the adjoining earth, such retaining wall shall stand one-half upon the lot of each owner and shall be made and maintained jointly by

the owners of the land on each side; provided that, if the owner of the lot having the lower grade shall bear and discharge the entire cost and expense of the making, such retaining wall shall be built entirely upon the lot having the higher grade and shall thereafter be maintained jointly by the owners of the land on both sides thereof.

3. **SURPLUS WALL.**—Where any owner shall insist on maintaining his ground either higher or lower than the legal regulation as hereinafter provided, except in a case herein otherwise specifically provided for, the surplus retaining wall, which may be necessary to support such height or provide for such excavation, shall be made and maintained at the sole expense of such owner.

4. **CONSTRUCTION.**—All retaining walls required under this section shall be constructed in accordance with the provisions of this chapter.

5. **REMOVAL.**—Any retaining wall erected or provided under this section, standing partly on the land of each owner, may be removed by either owner when the necessity for such retaining wall no longer exists.

SEC. 212. REGULATION OF LOTS.—The regulation of lots, in conformity with the street or streets on which they are situated, shall be calculated at an ascent of 2 inches in every 10 feet, measured from the curb in a direction at right angles or normal thereto; provided that, in the case of a lot having more than one street frontage, when so situated that the street frontages intersect, the curb along the longest street frontage shall be used, and, when so situated that the street frontages do not intersect, the curb along each frontage shall be used to one-half the depth of the lot between street frontages. A lot, as referred to in this section, shall be deemed and construed to mean a parcel of land not over 25 feet by 100 feet, in one ownership, whether adjacent land be in the same ownership or not; but, for the purpose hereof, no land in the same ownership may be divided into lots smaller than 25 feet by 100 feet.

SEC. 213. NEGLECT TO MAINTAIN.—If any person, whose duty it may be to jointly make or repair any partition fence or retaining wall or any part thereof, in pursuance of the provisions of this article, shall neglect so to do, or to join in so doing, for 6 days, after being requested, in writing, by the owner or owners of the adjoining ground, the owner of such adjoining ground may make or repair such partition fence or retaining wall, or cause the same to be done, and may recover from such person such share of the expense of making or repairing so much thereof as is necessarily made or repaired by him, with costs, in any court having jurisdiction.

SEC. 214. DISPUTES.—In case of any dispute between parties, as to what part or portion of the expense shall be borne and discharged by either of them, for building or maintaining any partition fence or wall, and in all cases of dispute concerning the sufficiency of any fence or wall, the controversy shall be determined by the superintendent of buildings of the borough in which the fence or wall may be situated.

SEC. 215. ENFORCEMENT.—The superintendent of buildings in each borough may, in order to effect the purposes of this article, notify in writing any owner of any requirement under any provision thereof. Any person who shall fail to proceed, within 10 days, in accordance with such notice, or to comply therewith, within such reasonable time thereafter as shall be allowed or permitted by the superintendent of buildings, shall be liable to a penalty of not less than \$10, nor more than \$50, and, in addition, he shall be liable to a further penalty of \$1 for each and every day that his default shall continue, after due notice thereof.

ARTICLE 12

EXCAVATIONS AND FOUNDATIONS

(In Effect September 22, 1915)

- Section 230. Excavations.
- 231. Soil, bearing capacity.
- 232. Foundations, generally.
- 233. Footings.
- 234. Foundation piers and caissons.
- 235. Pile foundations.
- 236. Foundation walls.
- 237. Retaining walls.

SEC. 230. EXCAVATIONS. 1. SAFEGUARDING GENERALLY.—Until provision for permanent support has been made, all excavations shall be properly guarded and protected so as to prevent the same from becoming dangerous to life or limb and shall be sheet-piled, braced or shored, where necessary to prevent the adjoining earth from caving in, by the person causing the excavation to be made.

2. **WHEN RETAINING WALL REQUIRED.**—When an excavation is made on any lot, and provision for the support of adjoining earth is not otherwise made in accordance with law, the person making such excavation or causing it to be made shall, at his own cost and expense, except as may be provided in article 11 of this chapter or as hereinafter provided in this section, build a retaining wall to support the adjoining earth; and such retaining wall shall be carried to the height of the adjoining earth, and be properly protected by coping.

3. **SUPPORT OF NEIGHBORING WALLS.**—a. When excavation exceeds ten feet. Whenever an excavation is intended to be, or shall be carried to the depth of more than ten feet below the curb, the person causing such excavation to be made shall at all times, if afforded the necessary license to enter upon the adjoining land, and not otherwise, at his own expense, preserve and protect from injury any wall, building or structure, the safety of which may be affected by said excavation, and support the same by proper foundations, whether the said wall, building or structure is down more or less than ten feet below the curb. If the necessary license is not accorded to the person making such excavation, then it shall be the duty of the owner refusing to grant such license to make such wall, building or structure safe, and to support the same by proper foundations; and, when necessary for that purpose, such owner shall be permitted to enter upon the premises where such excavation is to be made.

b. When excavation does not exceed ten feet. If such excavation is not intended to be, or shall not be, carried to a depth of more than 10 feet below the curb, the owner of any wall, building or structure, the safety of which may be affected by said excavation, shall preserve and protect the same from injury, and support the same by proper foundation; and, when necessary for that purpose, shall be permitted to enter upon the premises where such excavation is to be made. In case such wall, building or structure, however, is so located that the curb to which it is properly referred is at a higher level than the curb to which the excavation is referred, such part of any necessary underpinning or foundation as may be due to the difference in curb levels shall be made and maintained at the joint expense of the person causing the excavation to be made and the owner of such wall, building or structure.

4. **SUPPORT OF PARTY WALL.**—In case an adjoining party wall is intended to be used by the person causing the excavation to be made, and such party wall is in good condition and sufficient for the uses of the existing and proposed buildings, the person causing the excavation to be made shall, at his own expense, preserve such party wall from injury and support the same by proper foundations, so that said party wall shall be and remain practically as safe as before the excavation was commenced.

5. **SUPERINTENDENT OF BUILDINGS MAY ACT.**—If the person whose duty it shall be under the provisions of this chapter to properly guard and protect an excavation, or to prevent adjoining earth from caving in, or to preserve or protect any wall, building or structure from injury, shall neglect or fail so to do after having had a notice of twenty-four hours from the superintendent of buildings, such superintendent may enter upon the premises and employ such labor, and furnish such materials and take such steps as, in his judgment, may be necessary to prevent adjoining earth from caving in or to make such wall, building or structure safe and secure, or to prevent the same from becoming unsafe or dangerous, at the expense of the person whose duty it is to keep the same safe and secure. The City of New York or any person doing the said work, or any part thereof, under and by direction of a superintendent of buildings, may bring and maintain an action against the person last herein referred to, to recover the value of the work done and materials furnished, in and about the said premises, in the same manner as if he had been employed to do the work by the said person.

SEC. 231. SOIL, BEARING CAPACITY. 1. INDICATIVE STATEMENT REQUIRED.—Applications for permits for new buildings and, when necessary, for alterations to existing buildings, shall contain a statement of the character of the soil at the level of the footings.

2. **PRESUMPTIVE CAPACITIES.**—In the absence of a satisfactory test of the sustaining power of the soil, different soils, excluding mud, shall be deemed to safely sustain the following loads to the superficial foot, namely:

Soft clay.....	1 ton
Wet sand.....	2 tons
Firm clay.....	2 tons
Sand and clay, mixed or in layers.....	2 tons
Fine and dry sand.....	3 tons
Hard dry clay.....	4 tons
Coarse sand.....	4 tons
Gravel.....	6 tons
Soft rock.....	8 tons
Hard pan.....	10 tons
Medium rock.....	15 tons
Hard rock.....	40 tons

In case the soil under the footings of any one building is partly rock and partly yielding soil, the bearing capacity of the yielding soil shall be taken at not more than one-half of the capacity otherwise allowed.

3. **SOIL TESTS.**—When a doubt arises as to the safe sustaining power of the soil upon which a building is to be erected, the superintendent of buildings may order borings to be made, or he may direct the sustaining power of the soil to be tested in accordance with the methods established by the rules of the superintendent of buildings, by and at the expense of the owner of the proposed building. Where a test is made of the sustaining power of the soil, the superintendent of buildings shall be notified so that he may be present in person or by representative. The record of the test shall be filed in the bureau of buildings.

SEC. 232. FOUNDATIONS, GENERALLY. 1. GENERAL REQUIREMENTS.—Every building, except buildings erected upon solid rock or upon wharves or piers on the water front, shall have foundations of brick, or other approved masonry, iron or steel, laid not less than four feet below the surface of the earth, on the solid ground or level surface of rock, or upon piles or ranging timbers when solid earth or rock is not found.

2. **PROTECTION OF METAL WORK.**—Where metal is incorporated in or forms part of a foundation it shall be thoroughly protected from rust by paint, asphaltum, concrete, or by such materials and in such manner as may be approved by the superintendent of buildings.

SEC. 233. FOOTINGS. 1. MATERIALS.—The footings of foundation walls shall consist of footing stones, concrete, reinforced concrete construction or steel grillages. Wood footings may be used if they are entirely below the permanent water level.

2. **FOOTING STONES.**—Footing stones shall be not less than 2 by 3 feet, they shall not be less than 8 inches in thickness for walls, nor less than ten inches in thickness under piers, columns or posts. Footing stones shall be well bedded and laid crosswise, edge to edge.

3. **CONCRETE FOOTINGS.**—Concrete footings shall be not less than 12 inches thick, except that for frame buildings the thickness may be not less than 8 inches.

4. **STEEL GRILLAGES.**—When grillage beams, resting on a proper concrete bed, are used, they shall be provided with separators and bolts and shall be inclosed and filled solid between with concrete.

5. **PRESSURE UNDER FOOTINGS.**—For the loads exerting pressure under the footings of foundations the full dead loads and the figured live loads on the lowest tier of columns, piers or walls shall be taken. For this purpose the reduced live loads permitted by subdivision 7 of Sec. 53 of this chapter may be used.

6. **DESIGN.**—Footings shall be so designed that the loads they sustain per unit of area shall be as nearly uniform as possible and within the bearing capacities of soils established by this article, and that the stresses in the materials shall not exceed those fixed by this chapter. In proportioning the areas of footings for any building the dead loads alone shall be considered, provided, however, that in no case shall the pressure under the footings, as determined in subdivision 5 of this section, exceed the safe load on the soil established by this article.

SEC. 234. FOUNDATION PIERS AND CAISSONS.—The foundations of any building may be carried down to rock or hard pan by isolated piers of approved masonry or reinforced concrete, or by open or pneumatic caissons, so designed that the working stresses in materials and the loads on the rock or hard pan do not exceed those established by this chapter.

SEC. 235. PILE FOUNDATIONS. 1. GENERAL REQUIREMENTS.—Piles intended to sustain a wall or building, or any part thereof, shall be driven to a solid bearing, if practicable to do so, and the method of driving shall be such as not to impair their strength. No pile or group of piles shall be loaded eccentrically. Any type of pile construction not provided for in this section shall meet such requirements as may be prescribed by the rules of the superintendent of buildings.

2. **WOOD PILES. a. QUALITY AND SIZE.**—Wood piles shall be of approved timber, sound and straight. The diameter at the point shall be not less than 6 inches. The diameter at the butt shall be not less than 10 inches for piles not over 25 feet in length, and not less than 12 inches at the butt for piles of greater length.

b. **ALLOWABLE LOADS.**—The safe sustaining power of any wood pile in tons shall be taken as twice the weight of the hammer in tons multiplied by the height of the fall in feet, divided by the average penetration of the pile in inches under the last five blows, plus one, when a drop hammer is used for driving, and as twice the weight of the hammer in tons multiplied by the height of the fall in feet, divided by the average penetration in inches under the last five blows, plus one-tenth, when a steam hammer is used for driving, provided that the driving has reached such a point when successive blows produce approximately equal penetration. No wood pile, however, shall be weighted with a load exceeding 20 tons.

c. **CONSTRUCTION.**—The distance between wood piles shall be not more than thirty-six nor less than twenty inches on centers. The tops of wood piles shall be cut off below the permanent water level. When ranging and capping timbers are laid on piles for foundations, they shall be of hard wood not less than six inches thick and properly joined together, and their tops laid below the permanent water level.

d. MEADOW LAND CONSTRUCTION.—When wood piles are used under frame buildings built over the water or on salt meadow land, they may project above the water a sufficient height to raise the building above high tide, and the building may be placed directly thereon without other foundation.

3. CONCRETE PILES. a. CONCRETE FILLED STEEL TUBES.—For piles consisting of steel tubes filled with concrete, the tubes shall have a diameter of 9 inches or more and a thickness of not less than 5-16 of an inch. The ends of each tube shall be faced perpendicular to its axis. Splices shall be of an approved design and not more than one splice shall be used in the total length of the pile. The length of any such pile shall not exceed forty times the inside diameter of the tube. Such piles shall be driven to a full bearing on rock. The allowable load on any such pile shall not exceed 500 lbs. per square inch on the concrete and 7,500 lbs. per square inch on the steel, provided that in computing the effective area of the steel the outer 1-16 inch of thickness shall be deducted from the thickness of the tube. No interior steel reinforcement shall be used.

b. PILES MOULDED BEFORE DRIVING.—Concrete piles moulded and cured before driving shall not be provided with more than 4 per cent. of longitudinal reinforcement. The diameter or lateral dimension of such a pile shall be not less than 8 inches at the foot and shall not average less than 12 inches in the length of the pile. The length shall not exceed twenty times the average diameter when the pile is driven to rock nor forty times the average diameter in any case. When driven to rock the allowable load on any such pile shall not exceed 500 lbs. per square inch on the concrete at the average cross-section and 6,000 lbs. per square inch on the longitudinal reinforcement. If driven to rock, the foot shall be provided with a metal shoe.

c. PILES MOULDED IN PLACE.—Concrete piles cast in place shall be so made and placed as to insure the exclusion of any foreign matter, and to secure a perfect full-sized shaft. The average diameter of any such pile in place shall not be less than 11 inches and the diameter of the foot shall be not less than 6 inches. The length shall not exceed thirty times the average diameter. The allowable load shall not exceed 350 lbs. per square inch on the concrete.

d. ALLOWABLE LOADS.—When concrete piles are not driven to rock they shall be treated as friction piles and their carrying capacities shall be determined by test in accordance with rules established by the superintendent of buildings; but the stresses herein given for the materials composing them shall not be exceeded in any case.

e. CONCRETE.—The concrete for concrete piles shall be mixed in the proportion of 1 part of Portland cement to not more than 2 parts of clean, coarse sand, and 4 parts of broken stone or gravel of a size passing through a 1-inch ring, with sufficient water to produce a plastic or viscous consistency.

4. TESTS.—When any doubt exists as to the safe sustaining power of piles upon which a building or structure is to be supported, the superintendent of buildings may order a test of the same to be made at the expense of the owner of the proposed building or structure or the person causing the piles to be driven. The record of every such test shall be filed in the bureau of buildings.

SEC. 236. FOUNDATION WALLS. 1. DEFINITION.—Foundation walls shall be construed to include all walls and piers built below the curb level or the nearest tier of beams to the curb, which serve as supports for walls, piers, columns, or other structural parts of a building or structure.

2. MATERIALS.—Foundation walls shall be built of approved masonry, reinforced concrete or steel protected by masonry. All masonry foundation walls shall be laid in cement mortar.

3. THICKNESS.—If built of rubble stone, foundation walls shall be at least 8 inches thicker than the walls next above them, but not less than 18 inches in any case. If built of brick, concrete or hollow building blocks, they shall be at least 4 inches thicker than the walls next above them, but not less than 12 inches thick in any case. For each additional 10 feet, or part thereof, below the depth of 12 feet below the curb level, the thickness shall be increased 4 inches.

4. BRICK.—When brickwork in foundation walls is stepped up from the footings, the offsets, if laid in single courses, shall not exceed 1½ inches, or if laid in double courses, shall not exceed 3 inches.

5. STONE.—Rubble stone masonry, unless built in dressed, level courses, shall not be used for buildings exceeding 75 feet in height.

6. HOLLOW BUILDING BLOCKS.—Foundation walls of hollow blocks may be used only when the upper walls are of frame or hollow building block construction. The hollow spaces in the blocks shall be filled, as the construction progresses, with concrete of not less than 1 part of cement to 9 parts of aggregate.

SEC. 237. RETAINING WALLS.—All walls built to retain or support adjoining earth or rock, including foundation walls subjected to pressure from adjoining earth or rock, shall be constructed of approved masonry or reinforced concrete and so designed that in resisting the pressures to which they are subjected, including any water pressure that may exist, the working stresses of the materials shall not be exceeded, the soil shall not be overloaded and the stability of the wall shall be insured.

ARTICLE 13

MASONRY CONSTRUCTION

(In Effect October 6, 1915)

- Section 250. Definitions.
 251. Construction.
 252. Brick masonry.
 253. Stone masonry.
 254. Hollow building block masonry.
 255. Ashlar.
 256. Mortar.
 257. Wall thicknesses.
 258. Existing walls.
 259. Parapet walls.
 260. Hollow walls.
 261. Recesses and chases.
 262. Miscellaneous requirements.
 263. Masonry arches.

SEC. 250. DEFINITIONS.—For the purposes of this chapter:

- a. Approved masonry means masonry constructed in accordance with the requirements of this article, of the materials specified therein;
- b. Bearing wall means any wall which carries any load other than its own weight;
- c. Height, as applied to a wall, means the vertical distance to the top measured from the foundation wall, or from a girder or other immediate support of such wall.

SEC. 251. CONSTRUCTION. 1. MATERIALS.—Approved masonry shall be constructed of brick, stone, concrete, or hollow building blocks, or a combination of these materials as provided in this article. It shall be properly and solidly bonded with joints filled with mortar.

2. PROTECTION AGAINST FREEZING.—No masonry shall be built when the temperature is below 28 degrees F. on a rising temperature or 32 on a falling temperature at the point where the work is in progress. No frozen materials shall be built upon.

3. WETTING BRICK.—All brick shall be thoroughly wet just previous to being laid, except in freezing weather, when they shall be thoroughly dry.

4. ERECTION OF WALLS AND PIERS.—Masonry walls and piers shall be built to a line and carried up plumb. In each story the walls shall be carried up full thickness to the top of the beams above. No wall of any building shall be built up more than two stories in advance of any other portions of the walls of the building, provided that where walls are carried independently by girders at each floor this provision shall not apply. All walls that meet or intersect shall be bonded or anchored to each other in an approved manner. Any pier having less than four square feet of cross section when located at an intersection with a wall shall be bonded into and built as part of that wall.

5. PIERS.—Every pier supporting a girder, arch, column or a lintel spanning an opening over 10 feet, upon which a wall rests, shall be built of approved masonry. Every such pier having a height of more than ten times its least dimension, and every isolated pier built of brick or hollow building blocks, having less than 9 square feet of cross section shall, at vertical intervals of not more than 30 inches, have built into it bond stones not less than 4 inches thick, or approved perforated steel or cast iron plates of the full size of the pier. Isolated piers shall not exceed in height ten times their least dimension.

6. ARCHES AND LINTELS.—Door and window openings in walls shall be spanned by arches, or lintels having a bearing at each end of not less than 5 inches. In walls of non-fireproof buildings, when the thickness of the lintel is less than the thickness of the wall to be supported, a timber lintel may be placed on the inside of the wall resting at each end not more than 2 inches on the wall, and chamfered or cut to serve as centre for a rowlock or keyed arch. When the opening is more than 6 feet in width, templates shall be provided under the

ends of lintels resting on the walls, unless the pressure under the lintel does not cause a working stress in the masonry greater than specified in article 3 of this chapter.

7. **TIMBER IN WALLS.**—No timber, except lintels, provided for in subdivision 6 of this section, and nailing blocks not over 8 inches in length, shall be placed in any masonry wall.

8. **BRACING DURING CONSTRUCTION.**—The walls and beams of every building during erection or alteration shall be strongly braced from the beams of each story, and when required shall also be braced from the outside until the building is enclosed.

SEC. 252. BRICK MASONRY.—Except when laid in flemish bond or faced with running bond, every sixth course in brick walls shall be a heading course. When running bond is used, every sixth course shall be bonded into the backing by cutting the course of the face brick and putting in diagonal headers behind the same, or by splitting the face brick in half and backing the same with a continuous row of headers. Where face brick is used of a different thickness from the brick used for backing, the courses of the face brick and backing shall be brought to a level at intervals of not more than six courses in height of the backing, and the face brick shall be properly tied to the backing by a full heading course of the face brick or other approved method. Face brick shall be laid at the same time as the backing, and shall in no case be laid after the backing is in place.

SEC. 253. STONE MASONRY. 1. WORKMANSHIP.—No stone shall be laid in a wall in any other position than on its natural bed. Stones shall be firmly bedded in cement mortar and all spaces and joints thoroughly filled. No stone shall be used that does not bond or extend into the wall at least 6 inches. All headers shall be at least 12 inches in width and 8 inches in thickness, and consist of good flat stones.

2. **BOND.**—All stone walls 24 inches or less in thickness shall have at least one header extending through the wall in every 3 feet in height from the bottom of the wall, and in every 3 feet in length, and if over 24 inches in thickness, shall have one header for every 6 superficial feet on both sides of the wall, laid on top of each other to bond together, and running into the wall at least 2 feet.

3. **LIMITATION.**—Rubble stone walls, except for foundations, shall not be used in buildings over 60 feet high.

SEC. 254. HOLLOW BUILDING BLOCK MASONRY. 1. CONSTRUCTION.—Where walls of hollow building blocks are decreased in thickness, the blocks in the top course of the thicker wall shall be filled solidly with concrete or covered with slabs of hard burned terra cotta or concrete at least 1 inch in thickness. Terra cotta or concrete templates of approved size and thickness shall be placed under all floor beams and girders to properly distribute the loads.

2. **VENEERING.**—Hollow building blocks of terra cotta used in exterior walls shall be extra hard burned or veneered with brick, architectural terra cotta, or stone, or covered on the exposed surface with at least three-quarters of an inch of Portland cement stucco. When walls of hollow building blocks are veneered with brick, the facing shall be bonded to the backing with headers every sixth course of the brickwork.

3. **LIMITATION.**—Walls of hollow building blocks shall not be used in buildings over forty feet in height, except that in buildings of skeleton construction terra cotta blocks with shells and webs not less than one inch thick, faced with at least four inches of brickwork properly bonded as specified in this section, may be used.

SEC. 255. ASHLAR.—Stone, architectural terra cotta or other approved material, used for the facing of any wall and known as ashlar, shall be not less than 4 inches thick. Such ashlar shall be anchored to the wall in an approved manner. Within the fire limits ashlar shall not be used in any wall the total thickness of which is less than 12 inches.

SEC. 256. MORTAR.—In the following masonry construction no mortar other than cement mortar shall be used:—

- a. Foundation walls and footings;
- b. Rubble stone walls;
- c. Hollow building block construction;
- d. Walls faced with ashlar;
- e. Isolated piers;
- f. Curtain walls;
- g. Exterior walls of skeleton structures;
- h. Parapet walls;
- i. Chimney above roofs;
- j. Linings of existing walls.

SEC. 257. WALL THICKNESSES. 1. APPLICATION.—a. The thickness of masonry walls shall in all cases, irrespective of any other requirements of this section, be sufficient to keep the stresses in the masonry within the working stresses prescribed by this chapter.

b. The heights herein specified, unless otherwise clearly indicated, are the heights of walls as defined in Sec. 250.

c. In all cases the wall thicknesses herein specified shall be applied to the nearest tier of beams to the height specified.

d. Nothing in this section shall prevent the use in any wall of the same amount of material in piers and buttresses as is required for the thicknesses herein prescribed.

e. The unsupported height of any wall or part thereof shall not exceed twenty times the thickness of such unsupported part, unless reinforced by adequate cross-walls, buttresses or columns.

2. RESIDENCE BUILDINGS.—Except as hereinafter provided, the thicknesses of masonry walls of residence buildings hereafter erected shall be not less than the following:

a. When over 75 feet in height, 12 inches for the uppermost 25 feet, 16 inches for the next lower 35 feet, 20 inches for the next lower 40 feet, with a 4-inch increase for each additional lower section of 40 feet;

b. When not over 75 feet in height, 12 inches for the uppermost 55 feet, and 16 inches below that.

3. PUBLIC AND BUSINESS BUILDINGS.—Except as hereinafter provided, the thickness of masonry walls of public and business buildings hereafter erected shall be not less than the following:

a. When over 75 feet in height, 16 inches for the uppermost 25 feet, 20 inches for the next lower 35 feet, 24 inches for the next lower 40 feet, and increasing 4 inches for each additional lower section of 40 feet;

b. When over 60 feet and not over 75 feet in height, 16 inches for the uppermost 50 feet, and 20 inches below that;

c. When over 40 feet and not over 60 feet in height, 12 inches for the uppermost 20 feet, and 16 inches below that;

d. When not over 40 feet in height, 12 inches throughout.

4. INCREASED THICKNESS, WHEN REQUIRED.—a. Every bearing wall with face brick bonded with clip courses or ties, and every bearing wall faced with ashlar shall have a total thickness of at least 4 inches more than otherwise required unless the ashlar is at least 8 inches thick in every alternate course and bonded to the wall.

b. Every wall built of rubble stone shall have a thickness at least 4 inches more than required by subdivisions 2 and 3 of this section, but no such stone wall shall be less than 18 inches thick.

c. When the clear span between bearing walls is over 26 feet, such walls shall be increased 4 inches in thickness for every 12½ feet or part thereof that said span is over 26 feet.

d. All walls over 105 feet long between cross-walls or proper piers or buttresses, shall be increased in thickness over the minimum requirement at least 4 inches for every 105 feet, or part thereof, over 105 feet in length.

e. If the horizontal section through a bearing wall shows more than thirty per cent. area of flues and openings, such part of the wall where the excessive openings exist shall be increased four inches in thickness over minimum requirements for every fifteen per cent. or fraction thereof, of flue or opening area in excess of thirty per cent., provided that if such wall be laid up in Portland cement mortar the increase in thickness shall be required only when the area of flues and openings exceeds forty-five per cent.; or, instead of increasing such wall in thickness adequate piers or buttresses shall be provided.

f. In case any wall is increased in thickness in accordance with one of the requirements of this subdivision, it will not be necessary to further increase the thickness to meet another requirement of this subdivision, unless, in the judgment of the superintendent of buildings, the safety of the wall demands it.

5. ONE-STORY BUILDINGS.—In one-story buildings the walls may be 8 inches thick, provided that no such wall exceeds 50 feet in length between cross-walls or adequate buttresses.

6. SMALL RESIDENCE BUILDINGS.—In any residence building outside the fire limits and in any residence building not more than twenty feet in width within the fire limits, bearing walls of brick may be eight inches in thickness, provided such buildings are not more than forty feet in height and that the eight-inch walls do not exceed fifty feet in length between cross-walls or adequate buttresses, except that when the walls are not pierced by openings of any kind such length may be sixty feet.

7. **RESIDENCE BUILDINGS OUTSIDE THE FIRE LIMITS.**—Outside the fire limits the thicknesses of walls of hollow building blocks shall be not less than 8 inches for the uppermost 20 feet, 10 inches for the next lower 10 feet, and 12 inches for the next lower 10 feet.

8. **NON-BEARING WALLS.**—The thicknesses of non-bearing walls of residence buildings, or of public and business buildings, may be 4 inches less than those specified, respectively, in subdivisions 2 and 3 of this section for walls of corresponding height, provided that no such wall shall be less than 12 inches thick nor extend for more than 55 feet in height without any increase of thickness.

9. **CURTAIN WALLS.**—Non-bearing walls built between piers or metal columns shall be not less than 12 inches thick for the uppermost 60 feet of height, increasing 4 inches in thickness for each next lower section of 60 feet.

10. **WALLS OF SKELETON STRUCTURES.**—Masonry walls supported at each story by girders may be 12 inches thick for the entire height of the building.

11. **INTERIOR WALLS.**—a. In residence buildings, interior walls of brick or concrete, whether bearing or non-bearing walls, may be 8 inches thick for the uppermost 55 feet and 12 inches for the next lower 20 feet, provided that no such wall shall exceed 75 feet in height nor 30 feet in length between cross-walls or buttresses.

b. Interior walls over 75 feet in height may be reduced in thickness in such proportion to the number of cross-walls, piers or buttresses, and their nearness to each other, as may be deemed safe by the superintendent of buildings, provided, however, that such walls shall be not less than 12 inches thick at the top, and shall be gradually increased in thickness to the bottom.

SEC. 258. EXISTING WALLS. 1. WHEN USE IS PERMITTED WITHOUT CHANGE.—Walls heretofore built, whose thickness at the time of their erection was in accordance with the requirements of the then existing laws, but which are not in accordance with the requirements of this chapter, may be used without change, if in good condition, in buildings hereafter erected or altered, provided the stresses in the masonry do not exceed the working stresses prescribed by this chapter and the height of such walls be not increased except in so far as may be necessary to make the height uniform.

2. **LINING WALLS.**—In case it is desired to use and increase the height of any existing wall which is less in thickness than required by this chapter, such wall shall be reinforced by a lining of brickwork so that the combined thickness with the old wall shall be not less than 4 inches more than the thickness required for a new wall corresponding with the total height of the wall when increased in height, provided that such lining shall not be used to a greater height than forty feet and that such wall shall not be increased to exceed seventy-five feet in height. Such lining shall be supported on proper foundations, and shall be not less than eight inches in thickness, and thoroughly anchored to the old wall with suitable anchors, placed two feet apart and properly fastened or driven into the old wall in rows, alternating vertically and horizontally with each other, the old wall being first cleaned of plaster or other coatings where any lining is to be built against the same. No wall, however, shall be lined unless in good condition and not until the approval of the superintendent of buildings has been given.

SEC. 259. PARAPET WALLS.—All exterior and division or party walls of masonry over 15 feet high, except in detached buildings with overhanging roofs, or where such walls are to be finished with cornices, gutters or crown mouldings, shall have parapet walls carried above the roof. For residence buildings parapet walls shall be not less than eight inches thick and carried at least two feet above the roof, except that in party walls between buildings of the same height and not over forty feet in height, such parapet shall be not less than eight inches above the roof. For public and business buildings parapet walls shall be not less than twelve inches thick, and carried at least three feet above the roof. All parapet walls shall be coped with stone, terra cotta, concrete or cast iron.

SEC. 260. HOLLOW WALLS.—In all walls that are built hollow the same amount of masonry shall be used in their construction as if they were built solid, as in this chapter provided, and no hollow wall shall be built unless the parts of same are connected by proper ties, either of brick, stone or iron, placed not over 24 inches apart.

SEC. 261. RECESSES AND CHASES. 1. STAIRWAY AND ELEVATOR RECESSES.—Recesses for stairways or elevators may be left in the foundation walls of buildings, but in no case shall the wall be of less thickness than the walls of the fourth story, unless reinforced by additional piers with iron or steel girders, or iron or steel columns and girders, securely anchored to walls on each side.

2. **ALCOVES.**—Recesses for alcoves and similar purposes shall have not less than 8 inches of brickwork at the back of such recesses, and such recesses shall be not more than 8 feet in width, and shall be arched over or spanned with iron or steel lintels, and not carried up higher than 18 inches below the bottom of the beams of the floor next above.

3. PIPE-CHASES.—No chase for pipes or other purpose shall extend into any wall more than one-third of its thickness. No horizontal chase in any wall shall exceed 4 feet in length. No chase shall be made within the required area of any pier. Chases shall not be cut in walls of hollow block construction, but may be provided by properly formed blocks. Chases shall be filled up with solid masonry within the floor thickness at each story.

4. LIMITATIONS.—The aggregate area of recesses and chases in any wall shall not exceed one-fourth of the whole area of the face of the wall on any story. No recess shall be made within a distance of 6 feet from any other recess in the same wall.

SEC. 262. MISCELLANEOUS REQUIREMENTS. 1. HOLLOW BRICK.—The inside 4 inches of walls may be built of hard-burnt hollow brick, properly tied and bonded into the walls and of the dimensions of ordinary bricks.

2. FURRING.—Where hollow blocks of any kind are used as furring for walls, they shall not be included in the measurement of the thickness of such walls.

3. FIRE STOPS.—In all walls furred with wood, the brickwork between the ends of wood beams shall project the thickness of the furring beyond the inner face of the wall for the full depth of the beams.

SEC. 263. MASONRY ARCHES.—All masonry arches shall be capable of sustaining the weight and pressure which they are to carry, and the stress at any point shall not exceed the working stresses prescribed by this chapter. Tie rods shall be used where necessary to resist the thrust.

ARTICLE 14

WOOD CONSTRUCTION

(In Effect March 30, 1915)

Section 280. Wood beams and girders.

281. Wood columns and posts.

282. Bolting.

283. Stud partitions.

284. Fire stops.

SEC. 280. WOOD BEAMS AND GIRDERS. 1. WIDTH OF BEAMS.—No wood floor or roof beam used in any building hereafter erected within the fire limits shall be less than three inches thick.

2. SUPPORTS.—Every wood beam, except header and tail beams, shall have bearings of at least four inches. The ends of all such beams, where they rest on brick walls, shall be cut to a bevel of three inches in their depth. In no case, except in frame buildings, shall either end of a floor beam be supported on stud partitions. All wood trimmer, header and tail beams over four feet in length, unless supported on a wall or girder, shall be hung in approved metal stirrups or hangers.

3. BRIDGING.—All wood floor and roof beams shall be properly braced with cross bridging. The distance between bridging or between bridging and bearing shall not exceed eight feet.

4. ANCHORING.—a. Beams in walls. Each tier of beams shall be anchored to the walls at intervals of not more than six feet with approved steel or wrought iron anchors.

b. Beams on girders. The ends of wood beams resting upon girders shall be butted end to end and strapped by steel or wrought iron straps in the same beam as the wall anchors, or they may lap each other at least 12 inches and be well spiked or bolted together where lapped.

c. Girders. Wood girders shall be anchored to the walls and fastened to each other by suitable steel or wrought iron straps.

d. Anchor strips. Each tier of wood beams running parallel to enclosing walls shall be anchored to such walls with approved anchor strips, and similarly to every pier.

5. FIRE PREVENTION.—a. Trimming around flues. All wood beams shall be trimmed away from all flues and chimneys. The header and trimmer beams shall not be less than 4 inches from the outside face of the chimney. Any header beam supporting a trimmer arch in front of a fireplace shall be not less than 20 inches from the face of the chimney breast.

b. Separation in walls. Every wooden beam in any masonry or fire wall shall be separated from any other beam in the wall by at least four inches of solid masonry.

SEC. 281. WOOD COLUMNS AND POSTS.—All wood columns and posts shall be squared at the ends perpendicular to their axes, and cap and base plates shall be provided. Where the cap plate of a wood column or post supports a wood girder, any column above shall bear directly on the cap and shall not rest on the girder. Additional iron or steel cheek plates shall be placed between the cap and base plates and bolted to the girders, when required to transmit the loads with safety.

SEC. 282. BOLTING.—All bolts in wood construction shall be provided with washers of such proportions that the compression on the wood at the face of the washer will not exceed the working stresses prescribed in this chapter.

SEC. 283. STUD PARTITIONS.—Stud partitions which rest directly over each other and are not parallel with wood floor beams shall run down between the wood floor beams and rest on the top plate of the partition below, and shall have the studding filled in solid between the uprights to the depth of the floor beams with suitable incombustible materials.

SEC. 284. FIRE STOPS. 1. STUDDED-OFF SPACES.—Where walls are studded-off, the space between the inside face of the wall and the studding directly over such space shall be fire-stopped with fireproof material, for a depth of not less than 4 inches, securely supported; or the beams directly over the studded-off space shall be deafened with not less than 4 inches of fireproof material.

2. WAINSCOTING.—The surface of the wall or partition behind wainscoting shall be plastered flush with the grounds and down to the floor line.

ARTICLE 15

IRON AND STEEL CONSTRUCTION

(In Effect March 30, 1915)

Section 300. Cast iron columns.

- 301. Steel columns.
- 302. Column bases.
- 303. Lintels, beams and girders.
- 304. Framing and connecting.
- 305. Trusses.
- 306. Riveting.
- 307. Bolting.
- 308. Tie rods.
- 309. Templates.
- 310. Protection against corrosion.
- 311. Protection against fire.
- 312. Metal fronts.
- 313. Use of old materials.

SEC. 300. CAST IRON COLUMNS. 1. DIMENSIONS.—Cast iron columns shall not have a smaller outside diameter or side than 5 inches, nor shall they have an unsupported length greater than that allowed by Sec. 52 of this chapter.

2. THICKNESS OF METAL.—The thickness of metal shall be not less than one-twelfth the diameter or least dimension of cross section, but never less than three-fourths of an inch. When necessary the thickness shall be increased near the end so that the core of a column below a joint shall not be larger than the core of the column above, in which case the metal may be tapered down for a distance of not less than 6 inches; or a joint plate may be inserted of sufficient strength to distribute the load. Wherever the core of a cast-iron column has shifted more than one-fourth the thickness of the shell the thickness of the metal all around shall be assumed equal to the thinnest part.

3. WORKMANSHIP. a. Joints.—Cast-iron columns shall be machine faced at the end to a true surface perpendicular to the axis. They shall be bolted together with at least four bolts, not less than three-quarters of an inch in diameter, passing through the flanges, the bolts being of sufficient length to allow the nuts to be screwed up tightly; and as each column is placed in position, the bolts shall also be placed in position and the nuts shall be screwed up tightly.

b. Flanges.—Where cast-iron columns rest one on top of another, the top flanges of the lower column shall project on all sides not less than three inches from the outer surfaces of the column, and the shape and dimensions of the bottom flange of the upper column shall be the same as those of the top flange of the lower column, except that when a column is placed on a lot line, the flanges on the side toward such lot line may be omitted, if not required for

bolting. Flanges shall be at least one inch in thickness when finished, and reinforced by fillets and brackets when necessary.

c. Bolt Holes.—All holes in cast-iron columns shall be drilled. The diameter of the holes shall not exceed that of the bolts by more than one-sixteenth of an inch.

4. LIMITATION.—Cast-iron columns shall not be used in any case where the load is so eccentric as to cause tension in the cast iron. Nor shall they be used for such parts of the structural frame of buildings which are required to resist stresses due to wind.

5. INSPECTION.—No cast-iron column shall be set in place until it has passed an inspection satisfactory to the superintendent of buildings. Wherever blowholes or imperfections are found in a cast-iron column which reduce the area of the cross section at that point more than 10 per cent. of such columns shall be condemned. Cast-iron columns not cast with one open side or back shall have three-eighths inch holes drilled in the shaft, to exhibit the thickness of the castings, as may be required by the superintendent of buildings. Cast-iron columns shall not be painted before inspection.

SEC. 301. STEEL COLUMNS. 1. LENGTH.—No steel columns shall have an unsupported length greater than that allowed by Sec. 52 of this chapter.

2. DESIGN.—No part of a steel column shall be less than one-quarter of an inch thick. No material, whether in the body of the column or used as a lattice bar or stay plate, shall be used of less thickness than one thirty-second of its unsupported width, measured between centres of rivets transversely, or one-sixteenth the distance between centres of rivets in the direction of the stress. Stay plates are to have not less than 4 rivets, and are to be spaced so that the ratio of length to the least radius of gyration of the parts connected does not exceed 40, the distance between nearest rivets of two stay plates in this case being considered as length. In built-up columns the thickness of any outstanding member shall not be less than one-twelfth the width of the outstanding portion.

3. JOINTS.—The ends of all columns shall be faced to a plane surface at right angles to the axis of the columns. Wherever practicable the connection between them shall be made with splice plates. When splice plates cannot be used a connection formed of plates and angles, designed to properly distribute the stress, may be used. Where any part of the section of a column projects beyond that of the column above or below, the difference shall be made up by filling plates secured to the column by the proper number of rivets. All column connections shall be riveted.

SEC. 302. COLUMN BASES.—Whenever necessary to properly distribute the load, iron or steel shoes shall be used under the bottom tier of columns. Cast-iron bases or shoes shall be not less than one inch thick in any part. If any side of the bed plate exceeds three feet in length a reinforcing flange at least four inches high shall be provided around the outer edges. All cast-iron bases or shoes shall be planed on top, and, when resting on steel girders, on both top and bottom. Bases or shoes of steel plates and shapes shall be designed to meet the requirements of Sec. 301 of this chapter. Nothing in this section shall prevent iron or steel bases being made as a part of the columns.

SEC. 303. LINTELS, BEAMS AND GIRDERS. 1. CAST-IRON LINTELS.—Cast-iron lintels shall not be less than three-quarters of an inch in thickness at any point, and shall not be used for spans exceeding six feet.

2. DOUBLE BEAMS AS GIRDERS.—When rolled steel beams are used in pairs to form a girder, they shall be connected together by separators at intervals of not more than 5 feet. All beams 12 inches and over in depth shall have at least 2 bolts to each separator.

3. RIVETED GIRDERS.—The thickness of the web in riveted girders shall be not less than one-one hundred and twentieth of the distance between flange angles, and in no case less than one-quarter of an inch. If the unsupported depth of the web plate exceeds 60 times its thickness, stiffeners shall be used at intervals not exceeding 120 times the thickness of the web. Stiffeners of sufficient strength shall also be provided over supports and under concentrated loads.

4. LATERAL BRACING.—The compression flanges of steel beams and girders shall be secured against buckling, if the length exceeds twenty times their width, unless the working stresses in such flanges are proportioned to the ratio of length to width as provided for steel columns in Sec. 52 of this chapter.

SEC. 304. FRAMING AND CONNECTING.—All columns, beams, trusses and all other iron or steel work shall be suitably framed and connected together and to the walls. All beams framed into and supported by other beams or girders shall be connected thereto by angles or knees of a proper size and thickness with sufficient bolts or rivets to transmit the entire load, or by seats of sufficient strength and the necessary angles or knees to hold the beam in place. Beams resting on girders shall be securely riveted or bolted to the same.

SEC. 305. TRUSSES. 1. GENERAL DESIGN.—Trusses shall be of such design that the stresses in each member can be calculated.

2. LATERAL BRACING.—All trusses shall be held rigidly in position by efficient systems of lateral or sway bracing.

3. TENSION MEMBERS.—For tension members, the actual net area only, after deducting rivet holes one-eighth inch larger than rivets, shall be considered as resisting the stress.

4. COMPRESSION MEMBERS.—Compression members in pin-connected trusses shall be designed so that the stresses shall not exceed 75 per cent. of the permissible working stresses for columns.

5. EYE BARS.—The heads of all eye bars shall be made by upsetting or forging. No weld will be allowed in the body of the bar. Steel eye bars shall be annealed. Bars shall be straight before boring. Eyes and screw ends shall be so proportioned that upon test to destruction, fracture will take place in the body of the member.

6. PINS.—All pins shall be accurately turned. All pin-holes shall be bored true and at right angles to the axis of the members, and must fit the pins within one-thirty-second of an inch.

SEC. 306. RIVETING. 1. WHEN REQUIRED.—All component parts of built-up columns, girders and trusses, including any splices in the same, shall be riveted.

2. SPACING OF RIVETS.—The pitch of rivets shall never be less than three diameters of the rivet, nor more than 6 inches. In the direction of the stress it shall not exceed 16 times the least thickness of the outside member. At right angles to the stress it shall not exceed 32 times the least thickness of the outside member.

3. DISTANCE FROM EDGE.—The distance from centre of a rivet hole to the edge of the material shall not be less than:

- $\frac{3}{4}$ of an inch for $\frac{1}{2}$ -inch rivets;
- 1 inch for $\frac{5}{8}$ -inch rivets;
- $1\frac{1}{4}$ inches for $\frac{3}{4}$ -inch rivets;
- $1\frac{1}{2}$ inches for $\frac{7}{8}$ -inch rivets;
- $1\frac{3}{4}$ inches for 1-inch rivets.

4. LENGTH.—The lengths of rivets, between heads, shall not exceed five times the diameters.

5. DRIVING.—All shop rivets, wherever practicable, shall be machine driven. Rivets shall fill the holes completely. Rivet heads shall be hemispherical and concentric with the axis of the rivet.

SEC. 307. BOLTING. 1. WHEN PERMITTED.—Where riveting is not required by the provisions of this chapter connections may be effected by bolts, or mild steel, with United States standard threads. The threads shall be full and clean, the nut shall be truly concentric with the bolt, and the thread shall be of sufficient length to allow the nut to be screwed up tightly.

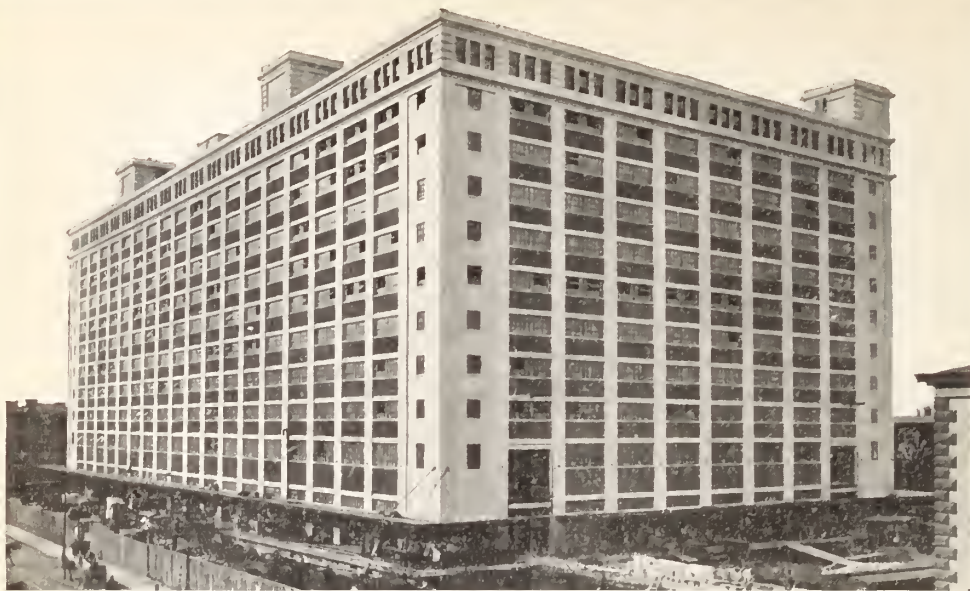
2. SUSPENDERS.—When the bolts are used for suspenders, the working stress shall be reduced to 9,000 pounds per square inch of net area, and the load shall be transmitted into the head or nut by suitable washers.

SEC. 308. TIE RODS.—Whenever tie rods may be required by the provisions of this chapter in connection with iron and steel construction they shall be at least three-fourths of an inch in diameter. Holes for tie rods in floor arches shall be placed as near the thrust of the arch as practicable. The distance between tie rods in floors or roofs shall not exceed 8 times the depth of the beams nor 8 feet in any case.

SEC. 309. TEMPLATES.—When any lintels, beam, girder or truss is supported at either end by a wall or pier, it shall be properly anchored thereto and shall rest upon a template or shoe of cast iron, steel or stone of such design and dimensions as to safely distribute its load on the masonry, except that when beams, not exceeding 6 inches in depth, are placed not more than 30 inches on centres, no templates shall be required.

SEC. 310. PROTECTION AGAINST CORROSION. 1. PAINTING.—All structural iron and steel work shall be cleaned of all scale, dirt and rust and be thoroughly coated with one coat of paint before erection, except that cast-iron columns shall not be painted until after inspection. Where surfaces in riveted work come in contact, they shall be painted before assembling. After erection all work shall be painted at least one additional coat of a different shade than the first.

2. SUBAQUEOUS WORK.—All iron or steel used under water shall be encased in concrete.



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SEC. 311. PROTECTION AGAINST FIRE.—Any iron or steel construction hereafter placed in any building to support a wall or part thereof or a sidewalk, shall be protected with not less than two inches of fireproof material securely applied, except that in non-fireproof buildings such protection shall not be required for columns immediately above the sidewalk level supporting walls fronting on streets.

SEC. 312. METAL FRONTS.—Metal fronts or facias hereafter erected on the exterior of buildings over one story high shall be backed up or filled in with masonry not less than 8 inches thick.

SEC. 313. USE OF OLD MATERIALS.—Nothing in this article shall prevent the use of old steel or wrought iron shapes, provided that the working stresses used do not exceed three-fourths of those specified in this chapter for steel, and that the provisions of this article are otherwise complied with.

ARTICLE 16

REINFORCED CONCRETE CONSTRUCTION

(In Effect October 6, 1915)

- Section 330. Definitions.
 331. Application.
 332. Concrete.
 333. Reinforcement.
 334. Working stresses.
 335. Slabs and beams.
 336. Use of fillers in floor construction.
 337. Columns.
 338. Walls.
 339. Protection of reinforcement.
 340. Load tests.
 341. Rules.

SEC. 330. DEFINITIONS.—For the purposes of this article:

- a. Reinforced concrete means any construction in accordance with the provisions of this article, of approved concrete in which steel is imbedded in such a manner as to increase its strength;
- b. The span of beams and slabs means the distance from centre to centre of supports, but not necessarily exceeding the clear span plus the depth of beam or slab, provided that brackets shall not be considered as reducing the clear span;
- c. The length of columns means the maximum unsupported length;
- d. The effective area of a concrete column with lateral reinforcement means the area of concrete within the hoops or bands.

SEC. 331. APPLICATION.—Reinforced concrete may be used for all types of construction, provided the material and design conform to the requirements of this article and such rules as may be adopted by the superintendent of buildings to secure safety in construction and uniformity in practice.

SEC. 332. CONCRETE. 1. MIXTURE.—The concrete for reinforced concrete structures shall consist of a wet mixture of one part of Portland cement to not more than six parts of aggregate, fine and coarse, either in the proportion of one part of cement, two parts of fine aggregate and four parts of coarse aggregate, or in such proportion that the resistance of the concrete to crushing shall not be less than two thousand pounds per square inch after hardening for twenty-eight days.

2. AGGREGATE.—a. Fine. Fine aggregate shall consist of sand, crushed stone or gravel screenings, passing when dry a screen having one-quarter-inch diameter holes, and not more than six per cent. passing a sieve having one hundred meshes per lineal inch, and of such quality that mortars composed of one part Portland cement and three parts fine aggregate by weight when made into briquettes will show a tensile strength of at least two hundred and forty pounds per square inch at twenty-eight days.

b. Coarse. Coarse aggregate shall consist of crushed stone or gravel which is retained on a screen having one-quarter-inch diameter holes and graded in size from small to large particles. The maximum size shall be such that all the aggregate will pass through a one-and-one-quarter-inch diameter ring. All aggregate shall be clean, hard, durable, and free from deleterious material.

SEC. 333. REINFORCEMENT.—The steel reinforcement shall conform to such requirements as may be adopted by the superintendent of buildings, or, in the absence of such requirements, to the standard specifications of the American Society for Testing Materials for steel reinforcement bars. Nothing herein contained shall prevent the use of steel wire or fabric for the reinforcement of slabs, for lateral reinforcement of columns, or for resistance to shrinkage and temperature stresses.

SEC. 334. WORKING STRESSES.—Reinforced concrete structures shall be so designed that the stresses in pounds per square inch shall not exceed the following:

Extreme fibre stress on concrete in compression.....	650
Concrete in direct compression.....	500
Shearing stress in concrete when all diagonal tension is resisted by steel..	150
Shearing stress in concrete when diagonal tension is not resisted by steel.	40
Bond stress between concrete and plain reinforcement.....	80
Bond stress between concrete and approved deformed bars.....	100
Tensile stress in steel reinforcement.....	16,000
Tensile stress in cold drawn steel wire or fabric, 35 per cent. of the elastic limit but not more than.....	20,000

In continuous beams the extreme fibre on concrete in compression may be increased fifteen per cent. adjacent to supports.

The ratio of the moduli of elasticity of 1 : 2 : 4 stone or gravel concrete and steel shall be taken as one to fifteen. The ratio of the moduli of elasticity of 1 : 1½ : 3 stone or gravel concrete and steel shall be taken as one to twelve.

SEC. 335. SLABS AND BEAMS. 1. THICKNESS.—Slabs shall not be less than four inches in thickness for floors and three and one-half inches for roofs.

2. TEE-BEAMS.—Where adequate bond between slab and web of beam is provided, the slab may be considered as an integral part of the beam provided its effective width shall not exceed on either side of the beam one-sixth of the span length of the beam nor be greater than six times the thickness of the slab on either side of the beam, the measurements being taken from edge of web.

3. PLACING OF REINFORCEMENT.—All reinforcement shall be accurately located and secured against displacement. The reinforcement for slabs shall not be spaced farther apart than two and one-half times the thickness of the slab.

4. WEB REINFORCEMENT.—Members of web reinforcement shall be so designed as to adequately take up throughout their length all stresses not taken up by the concrete. They shall not be spaced to exceed three-fourths of the depth of the beam in that portion where the web stresses exceed the allowable value of concrete in shear. Web reinforcement, unless rigidly attached, shall be placed at right angles to the axis of the beam and carried around the tension members.

SEC. 336. USE OF FILLERS IN FLOOR CONSTRUCTION.—When hollow tile concrete blocks or other acceptable fillers are used in any reinforced concrete floor construction, the reinforced concrete members of such floor construction shall be designed in accordance with the provisions of this article to take the entire loads, provided, however, that when the fillers do not exceed sixty per cent. of the construction, not more than two and one-half inches of concrete shall be required over the fillers.

SEC. 337. COLUMNS. 1. WITH LONGITUDINAL REINFORCEMENT ONLY.—In concrete columns, having not less than one-half nor more than four per cent. of vertical reinforcement secured against displacement by one-quarter-inch steel ties placed not farther apart than fifteen diameters of the vertical rods nor more than twelve inches, the allowable load shall be five hundred pounds per square inch on the concrete, plus seven thousand five hundred pounds on the vertical reinforcement.

2. WITH LONGITUDINAL AND LATERAL REINFORCEMENT.—In concrete columns, having not less than one-half nor more than two per cent. of hoops or spirals spaced not farther apart than one-sixth of the diameter of the enclosed column nor more than three inches, and having not less than one nor more than four per cent. of vertical reinforcement, the allowable load shall be five hundred pounds per square inch on the effective area of the concrete, plus seven thousand five hundred pounds per square inch on the vertical reinforcement, plus a load per square inch on the effective area of the concrete equal to two times the percentage of lateral reinforcement multiplied by the tensile stress in the lateral reinforcement prescribed by Sec. 334 of this article, the percentage of lateral reinforcement being the volume of the hoops or spirals divided by the volume of the enclosed concrete in a unit length of column. The hoops or spirals shall be rigidly secured to at least four verticals to insure uniform spacing.

3. **STRUCTURAL STEEL AND CONCRETE.**—In columns of structural steel, thoroughly encased in concrete not less than four inches thick and reinforced with not less than one per cent. of steel, the allowable load shall be sixteen thousand pounds per square inch on the structural steel, the percentage of reinforcement being the volume of the reinforcing steel divided by the volume of the concrete enclosed by the reinforcing steel. Not more than one-half of the reinforcing steel shall be placed vertically. The reinforcing steel shall not be placed nearer than one inch to the structural steel or to the outer surface of the concrete. The ratio of length to least radius of gyration of structural steel section shall not exceed one hundred and twenty.

4. **WHEN RICHER CONCRETE IS USED.**—In concrete columns the compression on the concrete may be increased twenty per cent. when the fine and coarse aggregates are carefully selected and the proportion of cement to total aggregate is increased to one part of cement to not more than four and one-half parts of aggregate, fine and coarse, either in the proportion of one part of cement, one and one-half parts of fine aggregate and three parts of coarse aggregate, or in such proportion as will secure the maximum density. In such cases, however, the compressive stress in the vertical steel shall not exceed seven thousand two hundred pounds per square inch.

5. **ECCENTRIC LOADS.**—Bending stresses due to eccentric loads shall be provided for by increasing the section of concrete or steel until the maximum stress shall not exceed the allowable working stress.

6. **LENGTH.**—In columns, the ratio of length to least side or diameter shall not exceed fifteen, but in no case shall the least side or diameter be less than twelve inches.

SEC. 338. **WALLS.**—Enclosure walls of reinforced concrete shall be securely anchored at all floors. The thickness shall be not less than one-twenty-fifth of the unsupported height, but in no case less than eight inches. The steel reinforcement, running both horizontally and vertically, shall be placed near both faces of the wall; the total weight of such reinforcement shall be not less than one-half pound per square foot of wall.

SEC. 339. **PROTECTION OF REINFORCEMENT.**—The reinforcement in columns and girders shall be protected by a minimum of two inches of concrete; in beams and walls by a minimum of one and one-half inches; in floor slabs by a minimum of one inch; and in footings by a minimum of four inches of concrete.

SEC. 340. **LOAD TESTS.**—The builder may be required to make load tests on any portion of a reinforced concrete structure within a reasonable time after erection. The tests shall be made under the direction of the superintendent of buildings, and shall show that the construction will sustain safely a load of one and three-quarters times the live load for which it was designed.

SEC. 341. **RULES.**—The rules governing reinforced concrete in building construction, heretofore adopted by the superintendent of buildings, so far as they are consistent with the provisions of this article, shall remain effective until amended or repealed by the superintendent of buildings.

ARTICLE 17

FIREPROOF CONSTRUCTION

(In Effect October 6, 1915)

Section 350. Walls.

- 351. Iron and steel construction.
- 352. Masonry.
- 353. Reinforced concrete.
- 354. Floors and roofs.
- 355. Partitions.
- 356. Interior finish.
- 357. Exterior windows.
- 358. Approvals.

SEC. 350. **WALLS.**—The exterior walls or piers of fireproof buildings shall be approved masonry or reinforced concrete.

SEC. 351. **IRON AND STEEL CONSTRUCTION. 1. GENERAL.**—All metal structural members which support loads or resist stresses, in fireproof buildings, shall be entirely encased in fireproofing material securely applied as hereinafter specified.

2. **COLUMNS.**—a. In exterior walls. Iron or steel columns placed within exterior walls or along the outer lines of a building shall be encased with approved masonry not less

than eight inches thick on their outer and side surfaces, nor less than four inches thick on their inner surfaces.

b. Interior.—Iron and steel columns used in the interior of a building shall be encased on all sides with fireproofing materials not less than two inches thick.

c. Lugs and brackets.—The extreme outer edges of lugs, brackets or other supporting parts of columns shall not extend nearer than one inch to the outer surface of the fireproof casing.

d. Protection to fireproofing.—Where the fireproofing of columns is exposed to damage from trucking or handling of merchandise, the superintendent of buildings may require such fireproofing to be jacketed for a height of three feet from the floor with a protective covering.

3. BEAMS AND GIRDERS.—Iron or steel beams and girders shall be entirely encased in fireproofing materials not less than two inches thick at any point when supporting a wall or part thereof or a sidewalk, and not less than one and one-half inches thick in any case.

4. LINTELS.—a. Iron or Steel. Iron or steel lintels over openings in walls shall be encased as required for beams, provided that when the span of any such opening does not exceed four feet or such opening is spanned by an adequate masonry arch above the lintel the fireproofing may be omitted.

b. Stone.—Stone lintels shall not be used in fireproof buildings, unless supplemented on the inside of the wall with iron or steel lintels, or with suitable masonry arches.

5. TRUSSES.—a. General. All members of steel trusses, except roof trusses herein-after specified, shall be entirely encased in fireproofing materials not less than two inches thick at any point.

b. Roof trusses.—The fireproofing herein required for trusses may be omitted when such trusses support only roof loads and ceilings over interior open spaces having a clear height of at least twenty feet below the lower chords of the trusses. In such cases the fireproofing may also be omitted from the soffits of roof beams or purlins.

6. FIREPROOFING MATERIALS.—The fireproofing required by this section shall consist of any of the following materials:—

a. Bonded brickwork laid in cement mortar;

b. Concrete consisting of one part Portland cement and not more than two parts of sand and four parts of gravel, stone or other approved aggregate that will pass through a three-quarter-inch ring, suitably reinforced with wire or metal fabric;

c. Cinder concrete consisting of one part Portland cement and not more than two parts of sand and five parts of clean, well-burned steam-boiler cinders, suitably reinforced with wire or metal fabric;

d. Porous or semi-porous terra cotta blocks with shells and webs at least one inch thick, laid in cement mortar, thoroughly bonded or secured by metal ties;

e. Solid gypsum blocks, containing not more than twenty-five per cent. by weight of cinders, asbestos fiber, wood chips or vegetable fiber, laid in gypsum plaster or cement mortar, thoroughly bonded or secured by suitable galvanized metal ties or fabric; or

f. Any material or form of construction that will resist the action of flame and a heat of seventeen hundred degrees Fahrenheit for at least two hours, without raising the temperature of the material to be protected above five hundred and fifty degrees Fahrenheit by transmission through a thickness of two inches as determined by test prescribed in the rules adopted by the superintendent of buildings.

7. PROHIBITION.—No pipes, wires, cables or other material shall be embedded in the required fireproofing or columns or other structural members.

SEC. 352. MASONRY.—Interior walls, piers, arches and vaultings that support loads in addition to their own weight in fireproof buildings shall be constructed of approved masonry, except that stone masonry shall not be used for such purpose, or for columns or lintels unless supplemented by other approved masonry or by properly protected iron or steel construction.

SEC. 353. REINFORCED CONCRETE.—Reinforced concrete construction conforming with the requirements of article 16 of this chapter shall be deemed fireproof construction.

SEC. 354. FLOORS AND ROOFS. 1. GENERAL.—The filling between steel floor and roof beams in fireproof buildings shall consist of arches or slabs of brick, terra cotta, stone concrete or cinder concrete, constructed as hereinafter specified, or of such other material or construction as may be approved by the superintendent of buildings as conforming to the requirements of the fire and strength tests hereinafter prescribed.

2. BRICK ARCHES.—When brick is used as floor filling it shall consist of segmental arches having a thickness of not less than four inches for spans of five feet or less, and of not

less than eight inches for spans exceeding five feet. Such arches shall be built of good, hard, common or hollow brick, laid to a line and solidly bonded. Each longitudinal line of brick shall break joints with the adjoining lines. The arches shall spring from suitable skewbacks and shall be properly keyed. The rise shall be not less than one inch for each foot of span. The brick shall be well wet before laying, and the joints filled solid with cement mortar.

3. **TERRA COTTA ARCHES.**—a. **Material.** When terra cotta is used as floor filling it shall consist of hollow blocks, either hard burned or semi-porous, of uniform density and hardness. The thickness of shells and webs of each block shall be not less than five-eighths of an inch. Interior vertical and horizontal webs of arch blocks shall not be spaced more than four inches apart. The skewbacks shall be of such form and section as to accurately fit the beams and properly receive the thrust of the arches. The arch blocks shall be laid in cement mortar and properly keyed.

b. **Segmental arches.**—When terra cotta filling is segmental in form the blocks shall be not less than six inches in depth with at least two cellular spaces in such depth. The rise of such arches shall be not less than one inch for each foot of span.

c. **Flat arches.**—When terra cotta filling is in the form of flat arches, the depth of the blocks, unless reinforced with steel, shall be not less than one and one-half inches for each foot of span between the steel beams, exclusive of the portion of the block projecting below the underside of the beams.

d. **Strength of terra cotta arches.**—Terra cotta filling shall be so designed that it will safely sustain the superimposed loads by increasing so far as may be necessary the depth and the thickness of shells and webs of the blocks. When such filling is reinforced by wire fabric, steel rods or other steel shapes, thoroughly embedded in Portland cement mortar and bonded to the terra cotta, the strength of the construction may be determined by accepted engineering formulae. For the purposes of this section the working stresses, in pounds per square inch, shall be taken at 500 for terra cotta in compression, 16,000 for steel in tension, and 100 for bond between steel and mortar and between terra cotta and mortar.

4. **CONCRETE FLOOR ARCHES.**—a. **Material.** When concrete is used as floor filling it shall consist of one part of Portland cement, and not more than two parts of sand and five parts of stone, gravel or cinders, reinforced in the case of slab construction with steel as herein provided. The stone or gravel shall be as required for reinforced concrete in article 16 of this chapter. Cinders shall be clean, well-burned steam-boiler cinders.

b. **Reinforcement.**—When reinforcement is required it shall consist of steel rods or other suitable shapes, or steel fabric. The tensional reinforcement in any case shall be not less than twelve hundredths per cent. in the case of cold drawn steel fabric, nor less than twenty-five hundredths per cent. in the case of other forms, the percentage being based on the sectional area of slab above the center of the reinforcement. The center of the reinforcement shall be at least one inch above the bottom of the slab, but in no case shall any part of the reinforcement come within five-eighths of an inch from the bottom of the slab.

c. **Segmental form.**—When the concrete floor filling is used in the form of segmental arches, the thickness shall be at least four inches at the crown. Such arches shall have a rise of not less than one inch for each foot of span.

d. **Flat construction.**—When the concrete floor filling is in the form of slabs the thickness shall be not less than four inches, except as otherwise provided in this article for special roof construction.

e. **Strength of concrete slabs.**—In determining the safe carrying capacity of concrete slab floor fillings the gross load in pounds per square foot of floor surface shall not exceed the product of the depth in inches of the reinforcement below the top of the slab, by the cross-sectional area in square inches per foot of width of the tensional steel, divided by the square of the span in feet, all multiplied by the following co-efficients when cinder concrete is used, 14,000 if the reinforcement is not continuous over the supports, 18,000 if the reinforcement consists of rods or other shapes securely hooked over or attached to the supports, and 26,000 if the reinforcement consists of steel fabric continuous over the supports, and, when stone concrete is used, 16,000, 20,000 and 30,000, respectively.

In determining the safe carrying capacities of concrete floor fillings segmental in form, the compressive stress in pounds per square inch in the concrete shall not exceed 300 for cinder concrete or 500 for stone concrete.

Nothing in this section shall prevent the determination of the safe carrying capacity of any form of concrete floor filling approved as fireproof under the provisions of this article, by the usual methods of calculation, provided the stresses used, in pounds per square inch, shall not exceed 300 for cinder concrete in compression, 16,000 for steel in tension, and 50 for bond between cinder concrete and steel, or in the case of stone concrete, the values fixed by article 16.

5. **TESTS OF FLOOR FILLINGS.**—a. **Fire tests.** In testing the fireproof qualities of any floor filling, at least one panel of the proposed maximum span, carrying a live load of at least one hundred and fifty pounds per square foot, shall be subjected to a fire continuous for four hours at an average temperature of seventeen hundred degrees Fahrenheit, followed

by an application for not less than ten minutes of a hose stream from a one and one-eighth inch nozzle at sixty pounds nozzle pressure, without appreciable deterioration or the passage of flame through the floor during the test.

b. Load tests. When the strength of any floor filling cannot be determined by the methods prescribed in this section or by the application of accepted engineering formulæ, the safe uniformly distributed carrying capacity shall be taken as one-sixth of the total load causing failure in a full-sized construction with the load applied at two points each at one-third of the span from the ends of the span.

6. SPECIAL ROOF CONSTRUCTION.—For mansards and dormers, roofs and bulkheads and roofs having a pitch of more than thirty degrees with the horizontal, blocks of terra cotta, stone or cinder concrete, or gypsum containing not more than twenty-five per cent. by weight of cinders, asbestos fiber, wood chips or vegetable fiber, not less than two inches thick, resting on steel shapes spaced not more than one foot for each inch of thickness in the block may be used instead of the construction prescribed by this section for floors and roofs.

7. TIE RODS.—The supporting beams in fireproof floors and roofs shall be tied together by steel tie rods of proper size, spacing and location, within the limitations fixed by Sec. 308 of this chapter, provided that when the floor filling is in the form of reinforced slabs and the reinforcement is continuous over the supports or securely attached to the same tie rods may be omitted.

8. SPAN OF FLOOR FILLING.—In fireproof buildings the span of any floor filling shall not exceed eight feet except when reinforced concrete or reinforced terra cotta is used.

9. TOP FILLING.—In fireproof buildings the space between the floor filling and the flooring shall be filled with concrete, consisting of one part of cement and not more than ten parts of cinders, or with other incombustible material approved by the rules of the superintendent of buildings.

10. CUTTING FLOORS.—After the floor filling is completed no opening greater than two square feet shall be cut through said floors unless suitable metal framing or reinforcing is provided around the opening. When pipes or conduits pass through floor fillings the openings around the same shall be filled in solidly with fireproof material unless approved close fitting individual sleeves, with the space around the sleeves filled solidly with incombustible material, are provided.

SEC. 355. PARTITIONS. 1. MATERIALS.—Except as otherwise provided in this section or in article 18 of this chapter, partitions hereafter erected in fireproof buildings shall be constructed of the materials and in the manner herein specified:

a. Brick in cement mortar;

b. Concrete, consisting of one part Portland cement and not more than three parts of sand and six parts of stone or gravel, not less than three inches thick if properly reinforced with steel, nor less than four inches thick otherwise;

c. Cinder concrete, consisting of one part Portland cement and not more than three parts of sand and six parts of cinders, not less than four inches thick if properly reinforced with steel, nor less than five inches thick otherwise;

d. Hollow terra cotta blocks, laid in cement mortar, not less than three inches thick;

e. Hollow concrete blocks, of either stone or cinder concrete, laid in cement mortar, not less than three inches thick;

f. Solid or hollow blocks consisting of gypsum containing not more than twenty-five per cent. by weight of cinders, asbestos fiber, wood chips or vegetable fiber, laid in gypsum plaster or cement mortar tempered with lime, not less than three inches thick;

g. Metal lath on a steel studding covered with Portland cement mortar or gypsum plaster, of a finished thickness of not less than two inches in the case of solid partitions nor less than three inches in the case of hollow partitions; or

h. Any material or form of construction that may be approved by the superintendent of buildings as conforming to the requirements of the fire test hereinafter prescribed.

But nothing in this section shall prevent the erection, in the discretion of the superintendent of buildings, of partitions of pressed metal and glass or of temporary partitions of wood and glass within rooms or spaces enclosed by fireproof partitions or walls.

2. CONSTRUCTION.—Unless built as approved masonry walls, partitions in fireproof buildings shall be independently supported at each floor. They shall be keyed, or otherwise securely fastened to the ceilings, and, when necessary, shall be stiffened with suitable steel uprights securely fastened to floor and ceiling. Partitions enclosing hallways or toilet rooms and other permanent partitions shall not rest on wood flooring but shall start on the fireproof construction of the floor.

3. TESTS OF FIREPROOF PARTITIONS.—In testing the fireproof qualities of any partition construction a vertical panel not less than fourteen feet long and nine feet high shall be subjected to a fire continuous for not less than one hour at an average temperature

of seventeen hundred degrees Fahrenheit during the latter half hour, followed by an application for not less than two and one-half minutes of a hose stream from a one and one-eighth inch nozzle at thirty pounds nozzle pressure, without the passage of flame during the test.

SEC. 356. INTERIOR FINISH. 1. GENERAL RESTRICTIONS.—Except as hereinafter otherwise permitted no woodwork or other combustible material shall be used in the floors, ceilings, partitions, furrings or other interior finish of fireproof buildings.

2. WOODWORK PERMITTED.—a. Floor sleepers, door bucks and grounds may be of wood provided that they are not exposed on any side; but this shall not permit the use of anything but metal lath, metal furring or forms of metal in ceilings or in ornamental plastering work.

b. When the height of the building does not exceed one hundred and fifty feet the doors and windows and their frames, the trim, casings and other interior finish when filled solid at the back with fireproof material, and the flooring may be of wood.

3. RESTRICTIONS IN BUILDINGS OVER ONE HUNDRED AND FIFTY FEET HIGH.—When the height of the building exceeds one hundred and fifty feet:

a. The flooring shall be of incombustible material or of fireproofed wood, provided that in public halls and stairways no wood of any kind, except for hand-rails, shall be used;

b. The inside window frames and sash, doors, trim and other interior finish shall be of metal or wood covered with metal, or of fireproofed wood, or of any incombustible materials or any combination of materials that will show a fire resistance not less than that of fireproofed wood.

4. FIREPROOFED WOOD.—The superintendent of buildings shall adopt rules prescribing the tests to which fireproofed wood and incombustible materials or any combination of materials shall be subjected. Such rules shall also provide for the inspection of the materials, to insure the installation of tested and approved materials only. No wood or other material required to be tested shall hereafter be placed in any building exceeding one hundred and fifty feet in height except in conformity to the requirements of this section.

SEC. 357. EXTERIOR WINDOWS.—When the height of a fireproof building exceeds one hundred and fifty feet, all exterior window frames and sash shall be of metal, or of wood covered with metal in the manner prescribed by the rules of the superintendent of buildings.

SEC. 358. APPROVALS. 1. EXISTING APPROVALS CONTINUED.—Any material or form of construction coming under the provisions of this article and heretofore approved may be used for the purposes for which it was approved, except so far as it may be inconsistent with specific provisions of this article.

2. NEW MATERIALS AND CONSTRUCTIONS.—Approvals for new materials and forms of construction shall be issued in accordance with the provisions of Sec. 22 of this chapter. Nothing in this chapter shall prevent the superintendent of buildings from accepting duly authenticated tests by any competent person, in lieu of the tests under his own supervision, provided the intent of this article is secured.

ARTICLE 18

SAFEGUARDS AGAINST SPREAD OF FIRE

(In Effect February 9, 1916)

Section 370. Definitions.

371. Fire walls.

372. Fire partitions.

373. Shafts.

374. Existing hoistways.

375. Protection of exterior openings.

376. Protectives for openings.

SEC. 370. DEFINITIONS.—For the purpose of this chapter:

a. A fire wall is any wall built for the purpose of restricting the area subject to the spread of fire;

b. A fire partition is a sub-dividing partition built for the purpose of protecting life by providing an area of refuge;

c. A shaft is an enclosed space extending through one or more stories of a building connecting a series of two or more openings in successive floors, or floors and roof;

d. An open shaft is one that extends through the roof of a building and is open to the outer air at the top;

- e. A vent shaft is one used solely to ventilate or light, or both, one or more water-closet compartments or bathrooms;
- f. An elevator shaft is one that encloses any device used for carrying persons or things upward or downward;
- g. A dumbwaiter shaft is an elevator shaft which has a cross-sectional area at any point of nine square feet or less, and in which the device is used only for the carrying of things;
- h. The term "self-closing," as applied to a fire door or other opening protective, means closing automatically after having been opened for use;
- i. The term "automatic," as applied to a fire door or other opening protective, means normally held in an open position and automatically closing by the action of some releasing device.

SEC. 371. FIRE WALLS. 1. CONSTRUCTION.—Fire walls shall be constructed of approved masonry or reinforced concrete of the thickness prescribed by this chapter for the exterior walls of the building in which it is erected, but if hollow terra cotta blocks are used they shall be filled solidly with concrete. In non-fireproof buildings fire walls shall be continuous from the foundation to the roof and provided above the roof with a parapet wall, as specified in Sec. 259 of this chapter.

2. OPENING.—No opening in a fire wall shall exceed eighty square feet in area, and the aggregate width of all openings at any level shall not exceed twenty-five per cent. of the length of the wall, except that in the first story of buildings equipped throughout with an approved system of automatic sprinklers larger openings and a greater percentage of wall length may be used by the special written permission of the superintendent of buildings, stating the reason for such allowance. Every opening in a fire wall shall be protected on each side of the wall with an approved automatic fire door. When any fire wall serves also as a fire partition it shall have no openings other than door openings not exceeding forty-eight square feet in area, and one of the automatic fire doors at each opening shall be replaced by a self-closing fire door.

SEC. 372. FIRE PARTITIONS. 1. CONSTRUCTION.—Fire partitions shall be constructed of the materials and in the manner herein specified, as follows:

- a. Approved masonry.
- b. Any form of fireproof partition, constructed as required in Sec. 355 of this chapter, provided (1) that such partition is supported on each story on fireproof construction,
 - (2) that, unless otherwise approved after the three hours fire test herein provided, the thicknesses are not less than eight inches for brick, not less than six inches for stone or cinder concrete, or hollow blocks of terra cotta, concrete or gypsum, and not less than four inches for stone or cinder concrete if properly reinforced with steel,
 - (3) that, unless constructed of expanded metal or wire lath and cement mortar of a finished thickness of not less than two and one-half inches, metal lath construction shall not be used, and,
 - (4) that all openings in partitions of hollow building blocks, gypsum or metal lath construction, shall be adequately reinforced with steel; or,
- c. Any material and form of construction that may be approved by the Superintendent of Buildings as conforming to the requirements of the fire test prescribed in subdivision 3, Sec. 355 of this chapter, provided, however, that for fire partitions the duration of such test shall be not less than three hours and that such partition shall be supported at each story on fireproof construction.

2. IN NON-FIREPROOF BUILDINGS.—In non-fireproof buildings fire partitions, if required in any story, shall be continuous through all stories from the foundation to the roof, provided that if any of the floors of the building are of fireproof construction for their full extent and all stairways are enclosed in approved fireproof construction, fire partitions shall be required to be continuous only from one such fireproof floor to another or to the roof. Any such fire partition shall be deemed continuous, even though the several parts are not directly over one another in successive stories, if the intervening parts of the floors at the levels where offsets occur, are of fireproof construction and all parts are not supported directly on the foundations are carried on fireproof construction. Fire partitions shall be carried at least three feet above any non-fireproof roof.

3. OPENINGS.—Fire partitions shall have no openings other than the required door openings. No such door openings shall exceed forty-eight square feet in area. If more than one door opening is required, the distance measured along the line of the fire partition, between any door and the next one shall not be more than sixty feet. Every opening in a fire partition shall be protected by an approved self-closing fire door.

SEC. 373. SHAFTS. 1. WHEN REQUIRED.—Unless otherwise specially provided by any other law or ordinance, shafts as in this section described and specified shall be pro-

vided in all fireproof and non-fireproof buildings for every series of floor openings, except stairways, hereafter placed or constructed in any such building, whether for air, light, elevator or any other purpose, or hereafter altered so as to enlarge any of such openings, or to change their use. The provisions of this section shall not, however, be taken to apply to ducts permitted by Article 19 of this chapter.

2. OPEN SHAFTS.—All open shafts hereafter placed in any building shall be constructed of approved masonry or reinforced concrete, and of the thicknesses required for exterior walls, provided that for shaft walls not exceeding ten feet in length the thickness may be reduced to not less than eight inches for the uppermost forty feet and four inches more for each lower section of forty feet.

3. SHAFTS EXCEEDING NINE SQUARE FEET IN AREA.—Except as herein after provided in this section, all shafts hereafter erected in any building and having a cross-sectional area at any point within the enclosing walls of more than nine square feet, and all existing shafts hereafter enlarged so that the cross-sectional area at any point exceeds nine square feet shall be constructed in the manner and of the material and thicknesses prescribed in subdivision 1, Sec. 372 of this article for fire partitions, or subdivision 2 of this section for open shafts.

4. SHAFTS NOT EXCEEDING NINE SQUARE FEET IN AREA.—All shafts hereafter erected in any building and having a cross-sectional area at any point of nine square feet or less, except as hereafter provided in this section, shall be constructed of approved masonry, reinforced concrete, or any material or form of construction, not less than two inches thick, permitted under the provisions of Sec. 355 of this chapter as permanent fireproof partitions, set in a steel frame of proper strength or suitably reinforced with metal dowels, or in such other manner as may be approved by the Superintendent of Buildings.

5. ELEVATOR SHAFTS IN EXISTING RESIDENCE BUILDINGS.—In existing residence buildings, which have not more than fifteen sleeping rooms any elevator shaft hereafter erected, when the available space does not permit of the construction required by subdivision 3 of this section, may be constructed as required by subdivision 4 of this section.

6. NON-FIREPROOF SHAFTS.—Vent shafts hereafter erected in non-fireproof residence buildings, when extending through not more than one story in height, carried not less than three feet above the roof and covered with a ventilating skylight of metal and glass, and dumbwaiter shafts hereafter erected that do not extend more than three stories above the cellar or basement in residence buildings occupied by not more than two families or having not more than fifteen sleeping rooms, may be built of wood filled in solidly with brick or other approved incombustible material, or covered on the inside with plaster on plaster board or metal lath, or with sheet metal not less than one-sixteenth of an inch in thickness, provided that the part of any such dumbwaiter shaft which extends into the cellar shall be enclosed in eight-inch brick walls.

7. EXISTING ELEVATORS.—In every non-fireproof public building all elevators not already enclosed in fireproof shafts shall be enclosed in walls constructed and arranged as in this section required for elevator shafts.

8. EXISTING DUMBWAITER SHAFTS.—Any existing dumbwaiter shaft which extends into the cellar or basement, except such as do not extend more than three stories above the cellar or basement in residence buildings, shall be enclosed in the cellar or basement with walls of brick eight inches thick or other fireproof construction approved by the superintendent of buildings, unless already enclosed in some form of construction conforming to the requirements of subdivision 4 of this section.

9. OPENINGS.—a. In open shafts having a cross-sectional area at any point of thirty-six square feet or less, hereafter erected or altered, all openings shall be protected with fire doors, fire shutters or fire windows.

b. In vent shafts, hereafter erected or altered, except non-fireproof vent shafts, all openings shall be provided with fire windows.

c. In elevator shafts hereafter erected or materially altered all door openings shall be protected by fire doors. No other openings shall be provided in such shafts, except window openings to the outer air.

d. In dumbwaiter shafts hereafter erected or altered, there shall be no openings other than door openings protected with self-closing fire doors.

e. All other shafts not provided for in this subdivision, hereafter erected or altered, shall have all openings protected with self-closing fire doors.

10. ENCLOSURE AT TOP.—All shafts hereafter erected or altered to extend into the top story of any non-fireproof building shall be carried through and not less than three feet above the roof. Every shaft extending above the roof, except open shafts, shall be enclosed at the top with a roof of fireproof construction and a metal skylight of at least three-fourths the area of the shaft in the top story, except that the skylight herein required may be replaced by a window of equivalent area in the side of the shaft provided the sill of such win-

dow is not less than three feet above the roof and the window does not face a property line within ten feet. Any shaft that does not extend into the top story of the building shall have the top enclosed with fireproof construction.

11. ENCLOSURE AT BOTTOM.—The bottom of every shaft, hereafter erected or altered, except vent shafts, shall be enclosed with fireproof construction.

12. ELEVATOR MACHINERY COMPARTMENT.—When any compartment which contains machinery for operating an elevator communicates with an elevator shaft it shall be enclosed with partitions of the same materials and construction as required for the shaft, and shall have fire doors on the openings.

13. NUMBER OF ELEVATORS RESTRICTED IN SHAFT.—Not more than two elevators shall be placed hereafter in any one shaft, and where there are only two elevators in any building they shall be placed in separate shafts.

SEC. 374. EXISTING HOISTWAYS. 1. GATES AND TRAP-DOORS.—In any existing buildings in which there shall be any hoistway, elevator or wellhole not already inclosed in walls constructed of brick or other fireproof material and provided with fireproof doors, the openings thereof through and upon each floor of said building shall be provided with and protected by substantial guards or gates and with such good and sufficient trap-doors as may be directed and approved by the superintendent of buildings. When, in the opinion of the superintendent of buildings, automatic trap-doors are required to the floor openings of any uninclosed elevator, the same shall be constructed so as to form a substantial floor surface when closed, and so arranged as to open and close by the action of the elevator in its passage either ascending or descending.

2. ENFORCEMENT OF SECTION.—Except as otherwise provided by law or ordinance, the superintendent of buildings shall have power and authority to require the opening of hoistways, elevators and wellholes in buildings to be enclosed or secured by trap-doors, guards or gates and railings.

3. GUARDS, GATES AND TRAP-DOORS TO BE CLOSED WHEN NOT IN USE.—All guards or gates required by this section shall be kept closed at all times, except when in actual use, and the trap-doors shall be closed at the close of the business of each day, by the occupant or occupants of the building having the use or control of the same.

SEC. 375. PROTECTION OF EXTERIOR OPENINGS. 1. WHEN REQUIRED.—Every window or other opening above the first story in the exterior walls of every fireproof and non-fireproof business building, more than forty feet in height, shall, except as may be otherwise specifically provided in this chapter or by any other law or ordinance, be protected by a fire door, fire window, fire shutter, open sprinkler or other approved protective when such opening is distant in a direct line less than thirty feet from any opening in any other building and not in the same plane with said opening, or when said opening is not more than fifty feet above a neighboring roof.

2. FIRE SHUTTERS TO BE READILY OPENED.—When fire shutters are used in exterior openings at least one row in every three vertical rows of shutters on front window openings shall be arranged to be readily opened from the outside. Distinguishing marks, satisfactory to the fire commissioner, shall be provided on these shutters.

3. OPENINGS TO FIRE ESCAPES.—When fire doors or fire shutters are used on exterior openings leading to fire escapes or exterior exits of any kind they shall be so arranged as not to obstruct such fire escapes or exit.

4. VERTICAL SEPARATION OF WINDOWS.—In fireproof and non-fireproof business buildings hereafter erected, over forty feet in height, exterior openings above the second story that are located vertically above one another and that do not require any protective under this section, shall have not less than three feet of solid masonry between the top of one opening and the bottom of the one next above, and no such opening shall be arranged to open within one foot of the ceiling of the story in which it is located, provided, however, that part of such masonry between openings may be replaced by wire glass in fixed metal sash and frame.

5. CLOSING PROTECTIVES.—All fire doors, fire shutters and fire windows on exterior openings, unless provided with approved automatic closing devices operative from either side, shall be closed when not required to be open, and at the close of business each day by the occupant or occupants of the building having the use or control of them.

SEC. 376. PROTECTIVES FOR OPENINGS. 1. CONSTRUCTION.—All opening protectives required or permitted under this chapter shall be constructed as prescribed in such rules, consistent with the provisions of this chapter, as may be promulgated by the superintendent of buildings, or, in the absence of such rules, as specified in the standard requirements of the National Board of Fire Underwriters; or they may be constructed in any manner and of any material that will comply with the fire test hereinafter prescribed.

2. FIRE TEST.—In testing the fireproof qualities of any opening protective a complete sample of the device of the maximum size to be approved, constructed and installed in every respect as in actual service, shall be subjected to a fire on one side, continuous for not less than one hour, at a temperature, in the case of fire doors and fire shutters increasing gradually from that of the outer air to eighteen hundred degrees Fahrenheit within the first half-hour and to two thousand degrees Fahrenheit during the second half-hour, and, in the case of fire windows, increasing gradually from that of the outer air to fifteen hundred degrees Fahrenheit within the hour, without permitting the passage of flame or the transmission of heat to a dangerous extent.

3. USE OF WIRE GLASS.—When wire glass is required or permitted by this chapter or the rules authorized thereunder, for fire doors, fire shutters or fire windows, the panes shall not exceed seven hundred and twenty square inches in area, and shall not be less than one-quarter inch in thickness, and shall be set not less than five-eighths of an inch in the frame. When the use of glass is permitted in any fire door or fire shutter only wire glass shall be used. For the glazing of fire window only wire glass shall be used.

ARTICLE 19

CHIMNEYS AND HEATING APPARATUS

(In Effect February 9, 1916)

Section 390. General.

- 391. Heat producing devices.
- 392. Chimneys.
- 393. Fireplaces.
- 394. Metal smokestacks.
- 395. Cupola chimneys.
- 396. Underground flues.
- 397. Ranges.
- 398. Drying rooms.
- 399. Smoke houses.
- 400. Registers.
- 401. Vent flues.
- 402. Ducts.
- 403. Smoke pipes.
- 404. Steam and hot water pipes.

SEC. 390. GENERAL. 1. DEFINITIONS. For the purposes of this chapter:

a. A chimney is that part of a building which contains one or more flues for transmitting the products of combustion from some fireplace or heating device to the outer air, and includes the fireplace when there is one;

b. A flue is a passage, enclosed on all sides with solid masonry or reinforced concrete and used only for the transmission of air, whether fresh, heated, or vitiated, or of the products of combustion from solid fuel or liquid fuel, and designated respectively vent flue or smoke flue;

c. A duct is a passage constructed of sheet metal or other approved incombustible material, and used only for the transmission of air, whether fresh, heated or vitiated;

d. A smoke pipe is a passage constructed of metal and used as an intermediate connection between a heat producing device and a chimney or metal stack for the transmission of the products of combustion.

2. NOTICE OF INSTALLATION. In case heat producing appliances or furnaces are hereafter placed in any building, or flues and fireplaces are installed, changed or enlarged, and such installation or alteration necessitates any change in any structural parts of the building, due notice shall be given to the superintendent of buildings by the person doing such work or causing the same to be done, and a permit secured from him if necessary.

SEC. 391. HEAT PRODUCING DEVICES.—For the purposes of this chapter, heat producing devices shall be graded as:

a. Low, including bakers' ovens; boiling vats; candy furnaces; clay, coke and gypsum tripoli kilns; coffee roasting ovens; cooking ranges; core ovens; cruller furnaces; drying furnaces for spent materials; feed drying ovens; fertilizer drying ovens; forge furnaces; gas producers; gypsum kilns; hardening furnaces (below dark red); hot air engine furnaces; hot air heating furnaces; hot water and low pressure steam heating boilers; japanning ovens; ladle drying furnaces; lead melting furnaces; nickel plate furnaces; paraffine furnaces; rendering furnaces; rosin melting furnaces; stereotype furnaces; sulphur furnaces; typefoundry furnaces; wood drying furnaces; wood impregnating furnaces;

b. Medium, including alabaster gypsum kilns; charcoal furnaces; direct fire heated feed driers; direct fire heated fertilizer driers; direct fire heated pulp driers; galvanizing furnaces; glass factory lehrs and glory holes; hardening furnaces (cherry to pale red); lime kilns; porcelain biscuit kilns; smoke houses; steam boilers, other than low pressure heating boilers; water-glass kilns; wood-distilling furnaces; wood gas retorts;

c. High, including annealing furnaces; bessemer retorts; billet and bloom furnaces; blast furnaces; bone calcining furnaces; brass furnaces; carbon point furnaces; cement, brick and tile kilns; coal and water gas retorts; cupolas; earthenware kilns; gas blow furnaces; glass smelting furnaces; glass kilns; open hearth furnaces; ore roasting furnaces; porcelain baking and glazing kilns; pot-arches; puddling furnaces; regenerative furnaces; reverberatory furnaces; stacks, carburetor or super-heating furnaces in water gas works; welding furnaces; wood carbonizing furnaces.

In doubtful cases the superintendent of buildings shall by a rule designate the grade of any heat producing device, being governed in doing so by the degree and amount of heat transmitted.

SEC. 392. CHIMNEYS. 1. CONSTRUCTION.—Except as in this article otherwise provided, every chimney hereafter erected shall be of brick or stone laid in cement mortar, or of reinforced concrete, extending above the highest point of the roof and at least four feet above the highest point of contact with the roof. Every chimney shall be properly capped with terra cotta, stone, cast iron or other approved incombustible, weatherproof material, except that on buildings forty feet or less in height the top courses of a brick chimney may be finished off by being carefully bonded and anchored together to serve as coping.

2. SUPPORTS.—All chimneys shall be wholly supported by stone, brick or self-supporting fireproof construction. No chimney shall rest or be built upon any wood construction.

3. FLUES FOR LOW GRADE DEVICES.—The smoke flues of stoves, cooking ranges, hot air, hot water and low pressure steam heating furnaces, and all other heat producing devices graded as low, shall be encased in brickwork or concrete not less than eight inches thick, except that for smoke flues exclusively used for ordinary stoves, ranges or open fireplaces, when no combustible studding, furring or sheathing is placed against it, such brickwork or concrete may be reduced to not less than four inches. In chimneys of stone, the stone work of such flues shall be four inches thicker than required for brick. Every flue coming under the provisions of this subdivision hereafter erected shall be lined with well-burnt terra cotta pipe, from the bottom of the flue or from the throat of the fireplace if the flue starts from a fireplace, for the entire height of the chimney. Such lining pipes shall be built in as the flues are carried up, laid end to end in cement mortar so as to make a smooth flue. Where two or more smoke flues are contained in the same chimney, the withes shall be either brick not less than four inches thick, or concrete or grout not less than one inch thick, provided, however, that every third with shall consist of brick.

4. FLUES FOR MEDIUM GRADE DEVICES.—The smoke flues of high pressure steam boilers, smoke houses and all other heat producing devices graded as medium shall be encased in brickwork or concrete not less than eight inches thick, or stonework not less than twelve inches thick, and in addition, shall be lined with not less than four inches of firebrick, laid in fire mortar, for a distance of at least twenty-five feet from the point where the smoke connection of the device enters the flue.

5. FLUES FOR HIGH GRADE DEVICES.—The smoke flues of cupolas, brass furnaces, porcelain baking kilns and all other heat producing devices graded as high shall be built with double walls, each not less than eight inches in thickness, with an air space of not less than two inches between them. The inside of the interior walls shall be of firebrick not less than four inches in thickness.

6. CERTAIN FLUES REQUIRED.—In every building hereafter erected exceeding forty feet in height, where one or more smoke flues start from the cellar or lowest story, at least one such flue shall have an internal cross-sectional area of not less than ninety-six square inches and shall start not less than three feet below the ceiling. No flue hereafter erected shall have smokepipe connections in more than one story of a building.

7. FLUES TO BE CLEAN AND CHIMNEYS SAFE.—Upon the completion of any new building or an alteration in any flues of an existing building, the flues shall be properly cleaned and left smooth on the inside. Any chimney which shall be dangerous in any manner whatever shall be repaired and made safe, or taken down.

8. UNLAWFUL USE OF FLUES.—It shall be unlawful to use as a smoke flue any flue hereafter erected or placed in any building or any flue now existing and not already used as a smoke flue, unless it conforms to the requirements of this section. Nothing in this article, however, shall prevent the use of approved metal flue linings for the repair or alteration of flues in residence buildings.

9. RAISING ADJOINING CHIMNEYS.—a. Whenever a building, wall or structure is hereafter erected, altered, enlarged or raised so that any of the walls, whether independent

or party along a property line or within three feet thereof, extends above the top of any chimney, smoke flue or smokestack of an adjoining building or structure, the owner of the building, wall or structure so erected, altered, enlarged or raised, shall at his own expense, carry up, either independently or in his own building, wall or structure, all chimneys, smoke flues and smokestacks of such adjoining building or structure within ten feet of any portion of the said wall extending above such chimney, flue or stack. The construction of such chimneys, flues or stacks shall conform to the requirements of this article applying thereto, but in no case shall the internal area of any flue or stack as raised be less than that of the existing flue or stack. All such chimneys, flues or stacks shall be carried above the walls in question to the heights prescribed, and shall, furthermore, be so constructed, supported and braced as to be at all times safe.

b. It shall be the duty of the owner of the building, wall or structure to be erected, altered, enlarged or raised to notify in writing, at least ten days before such work is begun, the owner of the chimneys, flues or stacks affected, of his intention to carry up such chimneys, flues or stacks as herein provided, and unless released in writing he shall carry up such chimneys, flues or stacks simultaneously with the walls.

SEC. 393. FIREPLACES. 1. FIREBACKS.—The firebacks of all fireplaces hereafter erected shall be not less than eight inches in thickness of solid masonry. A lining of firebrick or other approved material at least two inches thick shall be provided unless the fireback is twelve inches in thickness.

2. TRIMMER ARCHES.—All fireplaces and chimney breasts where mantels are placed, whether intended for ordinary fireplace use or not, shall have trimmer arches or fireproof construction supporting hearths. The arches and hearths shall be at least twenty inches in width measured from the face of the chimney breast. Trimmer arches shall be of brick, stone, terra cotta or reinforced concrete. The length of the trimmer arch shall not be less than the width of the chimney breast, and the length of the hearth shall be not less than the width of the mantel. The hearths shall be of brick, stone, tile or other approved fireproof material. The combined thickness of trimmer arch and hearth shall at no point be less than six inches. Wood centres under trimmer arches shall be removed before plastering the ceiling underneath.

3. HEATERS.—No heater shall be placed in a fireplace which does not conform to the foregoing requirements of this section.

4. MANTELS.—No wood mantel or other woodwork shall be hereafter placed within eight inches on either side nor within twelve inches of the top of any open fireplace. If a coal-burning heater of the Baltimore type is placed in a fireplace, any mantel that may be provided shall be of incombustible material. No combustible summer piece or fireboard shall be used in connection with any open fireplace. All spaces back of combustible mantels shall be solidly filled in with incombustible material.

5. FALSE FIREPLACES.—False fireplaces using summer pieces or fireboards shall not be placed in any building except against an unfurred masonry wall or a fireproof partition.

SEC. 394. METAL SMOKESTACKS. 1. CONSTRUCTION.—Metal smokestacks must be so constructed that they will be securely supported and that the materials entering into their construction or serving as support shall not be stressed beyond the working stresses fixed by this chapter. The metal work must be riveted and of adequate thickness, but not less than No. 16 U. S. gauge when the cross-sectional area is one hundred and fifty-four square inches or less, not less than No. 14 U. S. gauge when the cross-sectional area is more than one hundred and fifty-four square inches and not more than two hundred and one square inches, not less than No. 12 U. S. gauge when the cross-sectional area is more than two hundred and one square inches but not more than two hundred and fifty-four square inches, and not less than No. 10 U. S. gauge when the cross-sectional area is more than two hundred and fifty-four square inches. All metal work shall be painted; galvanized metal shall not be used. Cleanout openings shall be provided at the base of every such stack.

2. HEIGHT.—All such stacks serving high grade heat producing devices shall extend to a height of not less than ten feet above the highest point of any roof within twenty-five feet.

3. INDEPENDENT STACKS.—All such stacks hereafter erected outside and independent of any building shall be supported on substantial masonry foundations, so designed that the maximum pressure on the soil shall not exceed two-thirds of that prescribed in Sec. 231 of this chapter.

4. EXTERIOR STACKS.—Any such stacks, or any part thereof, hereafter erected on the immediate exterior of the building it serves shall be braced to such building at least every twenty feet. It shall have a clearance of not less than four inches from the walls of a fireproof or non-fireproof building and not less than twenty-four inches from the walls of a frame building; and a clearance of not less than twenty-four inches in any direction from any wall opening, fire escape or other exit facility, unless such stack is insulated in some approved

manner, in which case the clearances herein provided may be reduced an amount fixed by the superintendent of buildings when approving the insulation.

5. **INTERIOR STACKS.**—Any such stack, or part thereof, hereafter erected within any building shall be enclosed in walls of approved masonry; or, if in a fireproof building, such stack, or part thereof, shall be enclosed in walls of brick, terra cotta blocks or concrete not less than eight inches thick, with a space left between the stack and the enclosing walls sufficient to render the entire stack accessible for examination and repair. The enclosing walls shall be without openings above the story at which it starts.

6. **PROHIBITION.**—Smokestacks shall not be carried up inside of vent stacks or flues connected to ranges, unless such vent stacks or flues are constructed as required by this article for smokestacks or smoke flues.

SEC. 395. CUPOLA CHIMNEYS.—Chimneys or cupola furnaces, blast furnaces and similar devices shall extend at least twenty feet above the highest point of any roof within a radius of fifty feet thereof and be covered on the top with heavy wire netting or other approved spark arrester. No woodwork shall be within three feet of any part of such device or its chimney.

SEC. 396. UNDERGROUND FLUES.—Underground smoke flues shall be covered with at least twelve inches of solid masonry, or an approved equivalent insulation. If clean-out openings are installed they shall be provided with approved double iron doors or covers, of which the two parts are twelve inches apart, with the intervening space filled with insulating material. No combustible flooring shall be laid over any such flues.

SEC. 397. RANGES. 1. KITCHEN RANGES.—When fixed ranges are to be installed in any building hereafter erected trimmer arches extending beyond such ranges not less than six inches on all sides shall be provided unless the floor is of fireproof construction. No such range shall be placed against a stud partition, a furred wall or any other combustible construction. When any such range is to be placed within twelve inches of a wood stud partition the said partition shall be shielded with metal from the floor to a height of not less than three feet higher than the range, provided that when the range is within six inches of the partition the studs shall be cut away and framed three feet higher and one foot wider than the range and filled in to the face of said stud partition with brick or fireproof blocks.

2. **HOODS OVER RANGES.**—All hoods and ducts for same placed over hotel or restaurant ranges shall be constructed of incombustible materials and installed in accordance with the requirements of Sec. 403 for smokepipes.

SEC. 398. DRYING ROOMS.—Drying rooms hereafter placed within any building as a part of the building shall be constructed entirely of incombustible materials. When the heating pipes are not placed overhead, they shall be so shielded as to preserve at all times a clear space of not less than two inches between them and the contents. All such drying rooms shall be ventilated directly to the outer air by vent flues or ducts installed as specified in Sec. 403 of this article for smokepipes.

SEC. 399. SMOKE HOUSES.—All smoke houses hereafter erected as part of any building shall be of fireproof construction with walls of brick or reinforced concrete. All openings shall be provided with fire doors. The interior framing, racks, hangers and other interior fittings shall be of incombustible materials.

SEC. 400. REGISTERS.—All registers used in any hot-air furnace heating system, placed in any woodwork or combustible floor, shall rest upon stone or iron borders firmly set in plaster of paris or gauged mortar. All register boxes used in any such heating system shall be made of tin plate or galvanized iron with a flange to fit the rabbet in the border. The register box shall be enclosed in a tin or galvanized iron casing turned under the border and spaced at least two inches from the sides of the box. Such casing shall extend from the border to and through the ceiling below in the case of a floor register and through the partition in the case of a wall register. When a register box is placed in the floor over a portable furnace, the space on all sides between the casing and the register box shall be not less than four inches. Every hot-air furnace shall have at least one register without valve or louvres.

SEC. 401. VENT FLUES.—Flues hereafter erected for the removal of foul air or the transmission of heated air shall be encased in masonry not less than four inches thick and shall be lined with terra cotta or other approved incombustible material. Not more than one gas burner shall be direct-connected to any flue, nor shall any such device be connected to any flue used as a smoke flue. Any flue to which a gas burning device is direct-connected shall be constructed as required in Sec. 392 for a smoke flue.

SEC. 402. DUCTS. 1. GENERAL.—Except as may be otherwise specifically permitted or prescribed, the transmission of air through buildings for heating or ventilation shall be by means of ducts constructed as in this section provided.

2. CASING.—No casing, furring or lath of wood shall be placed against or cover a duct of any kind; but this shall not prevent the placing of woodwork on a covering over such ducts, of metal lath and plaster, plaster board or asbestos, provided the thickness of the covering is not less than seven-eighths of an inch.

3. IN PARTITIONS.—Ducts hereafter placed in combustible partitions shall be covered with one-half inch of corrugated asbestos or shall be constructed double with a one-half inch air space. The asbestos covering or outside pipe shall be not less than one and one-half inches away from the woodwork. In lieu of the above protection, four inches of brickwork or concrete may be placed between the duct and the woodwork.

4. IN FLOORS.—Ducts hereafter placed between the flooring and ceiling of non-fireproof floors shall be constructed double with a one-inch air space. The outside pipe shall be not less than two inches from any woodwork, which shall be covered with metal.

5. IN CLOSETS.—Ducts hereafter placed in closets or similar concealed spaces shall be double with a one and one-half inch air space, or shall be covered with approved incombustible insulation, not less than one inch thick. When constructed double the outside pipe shall be not less than No. 18 U. S. gauge, and not less than one inch from any woodwork.

6. PASSING THROUGH PARTITIONS AND FLOORS.—Ducts hereafter placed to pass through combustible partitions or floors shall be constructed double, with a one and one-half inch air space open at one end, or shall be covered with approved incombustible insulation not less than one inch thick.

7. HORIZONTAL DUCTS.—Ducts used for hot-air furnace heating hereafter placed under cellar ceilings shall be at least six inches below wood floor beams, wood lath plaster ceiling or other combustible materials; but if such combustible construction is protected by metal lath and plaster, plaster board or one-half inch asbestos the distance may be not less than three inches.

8. COLD AIR DUCTS.—The cold air ducts of any heating system shall be of metal or other approved fireproof material.

9. HOT AIR DUCTS.—No hot-air furnace duct shall be placed in any floor, partition or enclosure, of combustible construction, unless it be at least eight feet distant in a horizontal direction from the furnace.

SEC. 403. SMOKE PIPES. 1. RESTRICTION.—No smoke pipe shall pass through any floor, nor through any non-fireproof roof.

2. CLEARANCE.—The clear distance between any smoke pipe or metal breeching and any combustible material or construction shall be not less than eighteen inches in the case of low grade heat producing devices, nor less than thirty-six inches for medium or high-grade heat producing devices, except that, when such smoke pipes or breechings are protected with not less than two inches of asbestos or in some other approved manner, such clearances may be reduced one-half, and that, in the case of smoke pipes used on ordinary ranges and stoves in tenements or other residence buildings having not more than fifteen sleeping rooms, such clearances may be not less than nine inches when the combustible material or construction is protected by one-half inch asbestos or its equivalent, nor less than eighteen inches when not so protected.

3. PROTECTION THROUGH PARTITIONS.—Smoke pipes from ordinary ranges and stoves in residence buildings may pass through combustible partitions, provided every such pipe is guarded by a double metal ventilated thimble twelve inches larger in diameter than the pipe, or by a metal tube built in brickwork or other approved fireproof materials, not less than eight inches thick on all sides of the tube.

SEC. 404. STEAM AND HOT WATER PIPES. 1. PROTECTION.—Steam or hot water pipes shall not be placed nearer than one inch to any woodwork unless the woodwork is covered with metal, in which case the distance shall be not less than one-half inch. Every steam or hot water heating pipe passing through a combustible floor or partition shall be protected by a metal tube one inch larger in diameter than the pipe. Any such pipe passing through stock shelving shall be covered with not less than one inch of approved insulation. All wood boxes or casings inclosing steam or hot water heating pipes, or wood covers to recesses in walls in which such pipes are placed, shall be lined with metal.

2. PIPE COVERINGS.—Any coverings or insulation used on steam or hot water pipes shall be of incombustible material.

ARTICLE 20

ROOFING AND ROOF STRUCTURES

(In Effect February 9, 1916)

- Section 420. General.
 421. Roofing.
 422. Cornices and gutters.
 423. Leaders.
 424. Sky-lights.
 425. Scuttles.
 426. Roof houses.
 427. Slanting roofs.
 428. Tanks.
 429. Cooling towers.

SEC. 420. GENERAL.—Except when otherwise specifically provided for in this chapter, all construction other than water tanks hereafter placed above the roof of any part of any building within the fire limits or of any building more than forty feet in height outside the fire limits, shall be of incombustible materials.

SEC. 421. ROOFING. 1. MATERIALS.—Except as otherwise in this chapter specifically provided, every roof hereafter placed on any building or part thereof, shall be covered with an approved roofing of brick, concrete, tile, slate, metal, asbestos, slag, gravel, or other approved incombustible material.

2. PLANKING.—When wood planking or sheathing is permitted in roof construction, it shall not, in any case, extend across any side or party walls.

3. REPAIRS.—No roofing on any existing roof shall be renewed or repaired, except in conformity with the requirements of this section, provided, however, that when the renewal or necessary repairs do not constitute more than one-fourth of the roofing in any one roof surface, the new work may be made to conform to the existing roofing.

SEC. 422. CORNICES AND GUTTERS. 1. CONSTRUCTION.—All cornices, inclusive of those on show windows, and gutters, hereafter placed on the exterior of any building except buildings that are permitted to be of frame construction, shall be of incombustible materials. When constructed of sheet metal they shall be riveted in the seams at intervals of not more than five inches. Cornices shall be secured to the walls with metal framing or anchors, spaced not more than four feet apart, and extending not less than four inches into the wall at top and bottom.

2. REPAIRS.—All cornices or gutters that may now be or that may hereafter become unsafe shall be taken down, and if replaced, shall be constructed to conform to the requirements for new cornices, except that when any such cornice or gutter is not damaged to a greater extent than one-half, it may be repaired with the same material as originally constructed.

SEC. 423. LEADERS.—All buildings shall be provided with proper leaders for conducting water from the roofs. In no case shall the water from leaders be allowed to flow upon the sidewalk, but it shall be conducted by pipe or pipes to the sewer. If there be no sewer in the street then the water from the leader shall be conducted by proper pipe or pipes, below the surface of a street gutter, or to a cess-pool.

SEC. 424. SKYLIGHTS. 1. CONSTRUCTION.—All skylights hereafter placed in any building shall have the sashes and frames thereof constructed of metal, except that skylights in foundries or buildings where acid fumes are present as an incident to the occupancy of the building may be of wood in the discretion of the superintendent of buildings. The frames and other parts of metal skylights shall be riveted or otherwise securely fastened, in addition to soldering, and shall be securely anchored to the supporting structure.

2. GLAZING.—Skylights placed over shafts of any kind shall be glazed with plain glass not more than 3-16 of an inch in thickness. No pane of glass in any such skylight hereafter placed in any building shall exceed 720 square inches in area.

3. PROTECTION.—Every skylight in which plain glass is used shall be protected by a wire screen placed not less than four inches nor more than ten inches above the glazed portion of the skylight at all points. Such screen shall be not lighter than No. 12 U. S. gauge, shall have a mesh of not less than three-fourths of an inch nor more than one inch, shall ex-

tend beyond the glazing on all sides a distance not less than the height of the screen above the glazing. When any such skylight is located over any passageway or any room of public resort a similar screen shall also be placed below the skylight.

SEC. 425. SCUTTLES.—Unless provided with some other means of access to the roof, every building more than fifteen feet high, except dwellings with peak roofs, shall have in the roof a scuttle, with a substantial iron ladder leading thereto. All scuttles shall be covered on the top and edges with sheet metal or other approved incombustible material. The scuttle openings shall be at least two feet by three feet in size.

SEC. 426. ROOF HOUSES. 1. DEFINITIONS.—a. The term bulkhead as used in this section includes all such enclosed structures above the roof of any part of a building as enclose only stairways, tanks, elevator machinery or ventilating apparatus, or shafts.

b. The term pent house as used in this section means any enclosed structure, other than a bulkhead, extending not more than twelve feet above a roof.

2. **BULKHEADS.**—The walls of any bulkhead hereafter erected on any roof of a fireproof building shall be constructed as required for fire partitions by subdivision 1, section 372 of this chapter. Such walls may be used as bearing walls of the bulkhead roofs when they do not exceed fifteen feet in height and thirty-five feet in length, and the roof span does not exceed twelve feet. The roofs of such bulkheads shall be of fireproof construction as provided by section 354 of this chapter. The walls and roofs of all bulkheads, unless constructed of approved masonry, shall be covered on the outside with incombustible weatherproof material.

3. **PENT HOUSES.**—Every pent house shall be considered a story of the building and, except as may be otherwise specifically provided by law, its construction shall conform to the requirements for buildings of a height to which such pent house is carried; provided that when any exterior wall of such pent house sets back not less than five feet from the exterior walls of the next lower story of the building it may be constructed of brick not less than eight inches thick, or hollow building blocks not less than six inches in thickness, covered on the outside with incombustible weatherproof material, and supported by steel or reinforced concrete girders.

4. **DOORS AND WINDOWS.**—All doors and door frames in the exterior walls of bulkheads or pent houses shall be metal or metal covered wood. All windows in bulkheads or pent houses, except where otherwise specifically provided for, shall be constructed as other windows of the building similarly located.

5. **SUN PARLORS.**—Nothing in this section shall prevent the erection on any roof of any building of sun parlors or rooms for similar purposes, provided that only incombustible materials are used in the construction, and the floor of such structure is constructed as required for the roof of the building.

SEC. 427. SLANTING ROOFS. 1. CONSTRUCTION.—Every mansard or other slanting roof having a pitch of more than sixty degrees, hereafter placed on any non-fireproof building over forty feet high, shall be constructed fireproof as specified in Sec. 354 of this chapter.

2. **DORMER WINDOWS.**—Every dormer window hereafter erected shall be constructed in the same manner as the roof on which it is placed. The sides and top shall be covered with any of the materials approved for roofing.

SEC. 428. TANKS. 1. SUPPORTS.—Tanks of more than 500 gallons capacity hereafter placed in or on any building shall be supported on masonry, reinforced concrete or steel construction of sufficient strength and carried to a proper foundation.

2. **EMERGENCY OUTLET.**—Every such tank shall have in the bottom or on the side near the bottom, a pipe or outlet, not less than four inches in diameter, fitted with a suitable quick-opening valve for discharging the contents in an emergency.

3. **LOCATION.**—Such tanks shall not be placed over nor near a line of stairs or an elevator shaft, unless there is a solid roof or floor underneath the tank.

4. **COVERS.**—All unenclosed roof tanks shall have covers with proper slope.

5. **HOOPS.**—When hoops are used in the construction of tanks they shall be of metal round in section.

SEC. 429. COOLING TOWERS.—Cooling towers hereafter erected above any roof shall be of incombustible material, except the drip bars, which may be of wood.

ARTICLE 21

MISCELLANEOUS REQUIREMENTS

(In Effect March 7, 1916)

- Section 440. Cellar ceilings.
 441. Cellar floors.
 442. Cellar partitions.
 443. Waterproofing.
 444. Floor lights.
 445. Cutting beams.
 446. Bay and show window construction.

SEC. 440. CELLAR CEILINGS.—In any building hereafter erected, or altered so as to change its occupancy, except one story buildings outside of the fire limits and buildings occupied exclusively for residence purposes by one or two families, the wood beams over the cellar, or over the lowest story, if such story is partly below the curb or the surrounding ground level, when the curb level has not been established, shall be covered with metal lath and plaster, plaster board and plaster, or other approved incombustible material.

SEC. 441. CELLAR FLOORS.—In all buildings hereafter erected the cellar floor or any floor resting directly on the ground shall consist of 1 : 3 : 6 stone or cinder concrete not less than four inches thick.

SEC. 442. CELLAR PARTITIONS.—In all non-fireproof buildings, except buildings occupied exclusively for residence purposes by one or two families, permanent partitions in the cellar, or in any story more than half below the curb, shall be constructed of incombustible materials, unless such partitions enclose only coal or wood bins and do not extend to the ceiling.

SEC. 443. WATERPROOFING.—In all buildings hereafter erected, the exterior walls below the ground level and floors below the curb level resting directly on the ground, shall, when required, be waterproofed in accordance with the rules adopted by the superintendent of buildings.

SEC. 444. FLOOR LIGHTS.—Floor lights shall be constructed of metal frames and bars or plates, reinforced concrete, or other approved incombustible materials. If any glass in same measures more than sixteen square inches, it shall be provided with a mesh of wire either in the glass or under the same. Floor lights shall be of the same strength as the floors in which they are placed. Glass shall not be less than three-quarters of an inch in thickness.

SEC. 445. CUTTING BEAMS.—No beams shall be cut or pierced in any manner that would cause the beam to be of insufficient strength for its load.

SEC. 446. BAY AND SHOW WINDOW CONSTRUCTION.—Bay windows and show windows that extend beyond the exterior walls, hereafter constructed or placed on any fireproof or non-fireproof building, shall be constructed of incombustible materials and in such manner as will meet with the approval of the superintendent of buildings.

ARTICLE 22

FRAME BUILDINGS

(In Effect February 9, 1916)

- Section 470. Height.
 471. Area.
 472. Frame construction.
 473. Filling in walls.
 474. Roofing.
 475. Towers.
 476. Piazzas.
 477. Minor structures.
 478. Temporary structures.
 479. Miscellaneous frame structures.
 480. Permissible alterations.
 481. Use of masonry walls.

SEC. 470. HEIGHT.—Except as may be otherwise specifically provided in this chapter or in the rules authorized thereunder, no frame building or structure hereafter erected or

enlarged shall exceed 40 feet in height, except that buildings used in whole or in part as garages, motor vehicle repair shops or oil selling stations shall not exceed 25 feet in height.

SEC. 471. AREA. 1. BUILDING AREA.—No frame building hereafter erected or enlarged shall exceed five thousand square feet in area.

2. PLOT AREA.—The combined area of frame buildings, sheds and outhouses located on any lot or plot shall not exceed eighty per cent. of the area of that part of the lot or plot which is not already covered by fireproof or non-fireproof buildings.

SEC. 472. FRAME CONSTRUCTION.—The wood framework of all frame buildings, hereafter erected, shall consist of sills, posts, girts and plates of suitable size and materials with proper mortise and tenon framing and braced with studs at all angles, but this shall not prohibit the use of balloon framing with proper sills, posts, ribbon strips and plates provided the building is properly braced in all angles or the sheathing is put on diagonally. Floor and roof beams and rafters shall be not less than 2 inches in thickness. No part of the wood framework shall be built below the ground level.

SEC. 473. FILLING IN WALLS. 1. INDEPENDENT WALLS.—Any exterior wall of frame construction, hereafter erected within three feet of a side or rear line of the lot or plot on which it is located, or hereafter erected as the side wall of any frame tenement house, shall have the spaces between the studding filled in solidly with brickwork or other approved incombustible material.

2. PARTY WALLS.—Every party wall of frame construction hereafter erected shall have the studding filled in solidly with brickwork or other approved incombustible material not less than four inches thick. Every interior wall of frame construction extending from front to rear without openings and dividing the building into separate and distinct parts, shall have the studding filled in solidly with brickwork or other approved incombustible material.

3. EXTENT OF FILLING.—The filling herein required in exterior or party walls of frame construction shall in all cases be carried up from the ground to the under side of the roof boards.

SEC. 474. ROOFING. 1. WITHIN THE FIRE LIMITS.—Any roofing hereafter placed on any frame building within the fire limits shall be of approved incombustible materials, provided that any existing shingle roof may be repaired at any time to an extent of not more than twenty-five per cent. of its surface.

2. OUTSIDE OF FIRE LIMITS.—Nothing in this chapter shall prevent the use of wood shingles outside the fire limits on any building which, under the provisions of this chapter, is permissible of frame construction.

SEC. 475. TOWERS. 1. ON RESIDENCE BUILDINGS.—Outside of the fire limits towers, turrets or minarets of frame construction may be erected on frame buildings occupied or used exclusively as residence buildings, provided they do not extend more than ten feet above the limiting height for frame buildings and do not cover an aggregate area of more than fifteen per cent. of the roof area of the building, and that the greatest horizontal dimension of any one tower, turret or minaret is not more than fifteen feet.

2. CHURCH SPIRES.—Outside of the fire limits and the suburban limits, towers or spires of frame construction may be erected on frame buildings, occupied or used exclusively as churches or other places of worship, provided they do not exceed a height of seventy-five feet above the curb or ground level.

3. COVERING.—All towers or other structures provided for in this section shall be covered on the exterior with approved incombustible roofing.

SEC. 476. PIAZZAS.—Within the fire limits and the suburban limits, piazzas or balconies of wood may be erected on residence buildings having not more than fifteen sleeping rooms, provided they do not exceed twelve feet in width, and do not extend more than three feet above the second story floor beams. The roofs of all such piazzas or balconies shall be covered with incombustible material.

SEC. 477. MINOR STRUCTURES. 1. SHEDS.—Within the fire limits and the suburban limits sheds, open on at least one side, may be erected of wood, but such sheds shall not exceed fifteen feet in height, shall not cover an area exceeding twenty-five hundred square feet, shall not be placed nearer than four feet to any lot line, and shall be covered on the sides and roof with incombustible materials.

2. OUTHOUSES.—Outhouses of wood to be used exclusively for privies, or for the storage of coal or wood for domestic purposes, may be erected on the lot with any residence

building within the fire limits, or the suburban limits, provided they do not exceed eight feet in height, or one hundred and fifty square feet in area, and have the roofs covered with incombustible materials.

3. **BUILDERS' SHANTIES.**—One-story buildings for the use of builders in connection with any building operation for which a permit has been issued, may be constructed of wood and placed on the lot or plot where such building operation is carried on, or on adjoining lots or plots, if they do not interfere with the safe occupancy of any buildings thereon, or on the sheds which may be required or provided over the sidewalks in front of such building operation.

4. **FENCES.**—Fences of wood within the fire limits or the suburban limits shall not exceed twelve feet in height.

SEC. 478. TEMPORARY STRUCTURES. 1. **MEANING.**—Temporary structures shall be taken to mean platforms, reviewing stands, gospel tents, circus tents and other structures that are erected to serve their purpose for a limited time.

2. **PERMIT.**—Temporary structures shall not be erected until a permit, specifying the purpose and the period of maintenance, shall have been obtained from the superintendent of buildings.

3. **HOW LOCATED.**—Within the fire limits or the suburban limits no temporary structure which is enclosed in any manner shall be placed on any lot nearer than four feet to the lot line.

4. **REMOVAL.**—Every temporary structure shall be removed at the expiration of the period for which the permit was issued, unless such permit is renewed.

5. **UNLAWFUL USE.**—It shall be unlawful to use any temporary structure for any other purpose than that designated in the permit.

SEC. 479. MISCELLANEOUS FRAME STRUCTURES.—Frame structures which are of an unusual character and to which the provisions of this chapter do not directly apply, including among others, buildings for fair and exhibition purposes, towers for observation, amusement devices, greenhouses and lumber sheds, and temporary structures of any kind shall be erected in conformity to such rules, consistent with the provisions of this chapter and securing the general intent thereof, as may be adopted by the superintendent of buildings.

SEC. 480. PERMISSIBLE ALTERATIONS. 1. **APPLICATION.**—Subject to the requirements of this chapter as to construction, occupancy and location, any existing frame building within the fire limits or the suburban limits occupied exclusively as a residence building and having not more than fifteen sleeping rooms, may be altered and enlarged of frame construction as hereafter specified in this section, provided that no such building shall be altered or enlarged to be used for any other purpose.

2. **RAISING IN HEIGHT.**—a. Any such building situated in a row of frame buildings may be increased in height to conform to the height of adjoining buildings.

b. Any such building already exceeding twenty-five feet in height, that has a peaked roof, may be raised for the purpose of making a flat roof thereon, provided that the new roof is covered with incombustible material, and that, when so raised, the building shall not exceed forty feet in height to the highest part thereof.

c. Nothing in this section shall prohibit one-story and basement residence buildings from being increased one additional story in height.

3. **EXTENSIONS.**—a. Any such building may be extended either on the front or rear to a depth of not more than fifteen feet and not more than the width of the building and not more than two stories and basement in height.

b. If any such building has an extension of less width than the main building the same may be increased in width to the full width and height of the main building.

4. **BAY WINDOWS.**—Any such building may have bay windows of wood placed on any story, the roofs of which may be covered with the same material as the roof of the main building, except when such a bay window would increase the width of the building to more than eighty-five per cent. of the width of the lot.

SEC. 481. USE OF MASONRY WALLS.—In case approved masonry or reinforced concrete is used for the exterior walls of any building which under the provisions of this chapter is permitted to be of frame construction, nothing in this chapter shall prohibit all other parts of the building from being constructed as though the entire building were of frame construction.

ARTICLE 23

BUILDINGS OF A PUBLIC CHARACTER

(In Effect March 30, 1915)

Section 490. Public safety.

- 491. Aisles and passageways.
- 492. Enforcement of article.
- 493. Exemptions.

SEC. 490. PUBLIC SAFETY.—In all buildings of a public character, such as hotels, churches, theatres, restaurants, railroad depots, public halls, and other buildings used or intended to be used for purposes of public assembly, amusement or instruction, and including department stores and other business and manufacturing buildings where large numbers of people are congregated, the halls, doors, stairways, seats, passageways and aisles, and all lighting and heating appliances and apparatus shall be arranged as the superintendent of buildings shall direct, to facilitate egress in cases of fire or accident, and to afford the requisite and proper accommodation for the public protection in such cases.

SEC. 491. AISLES AND PASSAGEWAYS.—All aisles and passageways in said buildings shall be kept free from camp stools, chairs, sofas and other obstructions, and no person shall be allowed to stand in or occupy any of said aisles or passageways during any performance, service, exhibition, lecture, concert, ball or any public assemblage.

SEC. 492. ENFORCEMENT OF ARTICLE.—The superintendent of buildings may at any time serve a written or printed notice upon the owner, lessee or manager of any of said buildings, directing any act or thing to be done or provided in or about the said buildings and the several appliances therewith connected, such as halls, doors, stairs, windows, seats, aisles, fire walls, fire apparatus and fire-escapes, as he may deem necessary.

SEC. 493. EXEMPTIONS.—Nothing herein contained shall be construed to authorize or require any other alterations to theatres existing prior to June 9, 1885, than are specified in this article.

ARTICLE 24

MOTION PICTURE THEATRES

(In Effect March 30, 1915)

Section 500. Plans.

- 501. Restrictions.
- 502. Construction.
- 503. Means of egress.
- 504. Booth for projecting-machine and film.
- 505. Application to existing theatres.
- 506. Open-air motion picture theatres.

SEC. 500. PLANS.—Before the erection, construction or alteration of a building or part thereof, to be used as a motion picture theatre, as defined in Sec. 30 of chapter 3 of this ordinance, there must be filed with the appropriate superintendent of buildings complete plans and the detailed statement of the specifications therefor, required by Sec. 3 of this chapter. The plans must show clearly and fully the location and width of all aisles, passageways, exits, stairways and fire escapes; the arrangement of seats; the size of floor beams, walls and supports; the location and construction of the enclosure for the motion picture machinery and other apparatus; a diagram of the lot or plot upon which the theatre is to be erected or constructed, showing the outlets from all exits, and also such other statements, plans and details as may be required by the superintendent of buildings having jurisdiction.

SEC. 501. RESTRICTIONS.—No motion picture theatre, as defined aforesaid, shall be constructed in a frame building within the fire limits, nor in a hotel, tenement house or lodging house, nor in a factory or workshop, except where the theatre is separated from the rest of the building by unpierced fire walls and floors, and in no case shall such a theatre be constructed or operated above or below the ground floor of any building.

SEC. 502. CONSTRUCTION.—In all motion picture theatres, as defined aforesaid, to be hereafter constructed, the following requirements shall be complied with, namely:

1. CEILINGS.—The ceilings of all theatres and of all rooms used in connection therewith shall be plastered with three coats of first-class plaster on wire mesh or metal lath, or covered with $\frac{1}{2}$ -inch plaster boards, and plastered or covered with metal. If there be a basement or cellar, the ceiling under the floor of the theatre must be plastered with three coats of first-class plaster on wire mesh or expanded metal lath, or may be covered with metal on $\frac{1}{2}$ -inch plaster boards.

2. **FLOOR-LOADS.**—The flooring of that portion of the building devoted to the uses or accommodation of the public must be of sufficient strength to bear safely a live load of 90 pounds per square foot.

3. **GALLERIES AND STAIRWAYS.**—A gallery may be permitted, except in a theatre constructed on a lot less than 20 feet in width, but it shall not include more than 25 per cent. of the total seating capacity of the theatre. Entrance to and exit from the gallery shall in no case lead to the main floor of the theatre, and the gallery shall be provided with a stairway or stairways equipped with hand-rails on both sides. Stairways over 7 feet wide shall be provided with centre hand-rails. The risers of the stairways shall not exceed $7\frac{3}{4}$ inches, and the treads, excluding nosings, shall not be less than $9\frac{1}{2}$ inches. There shall be no circular or winding stairways. The total width of the stairways shall not be less than 8 feet in the clear where the gallery accommodates 150 people; for every 50 people less than 150, accommodated by the gallery, said width may be reduced 1 foot. Stairways shall be constructed of fireproof material, and such material and the bearing capacity of such stairways shall be approved by the bureau of buildings.

4. **GRADIENTS.**—To overcome any difference of level between corridors, lobbies and aisles in a theatre, gradients of not over 1 foot in 10 feet, or steps having a rise not over 8 inches and a width of not less than 10 inches shall be used.

5. **WALLS.**—If the walls of the theatre contain wooden studs they shall be covered either with expanded metal lath or wire mesh and plastered with three coats of first class plaster, or with metal on $\frac{1}{2}$ -inch plaster boards, and all joints shall be properly filled with mortar.

SEC. 503. MEANS OF EGRESS. 1. **AISLES.**—All aisles in a motion picture theatre or in a gallery thereof must be at least 3 feet in the clear.

2. **CHAIR SPACE.**—All chairs in such a theatre, except those contained in the boxes, must not be less than 32 inches from back to back and must be firmly secured to the floor; no seat shall have more than 7 seats intervening between it and an aisle, and the space occupied by each person shall be separated from the adjoining space by means of an arm or other suitable device.

3. **EXITS.**—A building to be erected or to be altered for use as a motion picture theatre must be provided, on the main floor thereof, with at least two separate exits, one of which shall be in the front and the other in the rear of the structure and both leading to unobstructed outlets to the street. Where the main floor of the theatre accommodates more than 300 people there shall be at least three such exits, the aggregate width in feet of which shall not be less than one-twentieth of the number of persons to be accommodated therein. No exit shall be less than 5 feet in width, and there shall be a main exit, not less than 10 feet in total width. All exit doors must be fireproof and made to open outwardly, and be so arranged as not to obstruct the required width of exit or court when opened. All doors leading to fire escapes must be not less than 40 inches wide in the clear, and shall be located at the opposite side or end of the gallery from other exit doors.

4. **EXIT PASSAGEWAY TO STREET.**—In any such building, if an unobstructed exit to a street cannot be provided at the rear thereof as herein specified, either an open court or a fireproof passageway or corridor must be provided, extending from the rear exit to the street front, at least 4 feet in the clear for theatres accommodating 100 persons or less; the width to be increased 8 inches for every additional 100 persons to be accommodated. Such passageway or corridor must be constructed of fireproof material and be at least 10 feet high in the clear. The walls forming such passageway or corridor must be at least 8 inches thick, and shall be constructed of brick or other approved fireproof material. If there be a basement, the wall on the auditorium side should either run 1 foot below the cellar bottom, or may be carried in the cellar on iron columns and girders properly fireproofed, according to Sec. 350 of this chapter. The ceiling of such passageway must be constructed as required by Sec. 352 of this chapter. If unobstructed rear exits or exits to a street are provided, they must be of the same total width required for the court, passageway or corridor above mentioned. The level of the open court or passageway at the front of the building shall not be greater than one step above the level of the sidewalk, and the grade shall not be more than 1 foot in 10, with no perpendicular risers.

5. **FIRE-ESCAPES.**—Galleries must also be provided with at least one line of fire escapes, leading to an open court, fireproof passage or street without re-entering the same or any other building. If the fire escape leads to a point in the court nearer the street than any exit, there must be a width of not less than 4 feet in the clear between the outer edge of the fire escape and the outer wall of the court. All fire escapes must have balconies, not less than 3 feet 4 inches in width in the clear, and not less than 4 feet 6 inches long, and from said balconies there shall be staircases extending to the ground level, with a rise of not over $7\frac{3}{4}$ inches and a step of not less than $9\frac{1}{2}$ inches, and the width of the stairs must not be less than 3 feet 4 inches.

SEC. 504. BOOTH FOR PROJECTING-MACHINE AND FILM.—Apparatus for projecting motion pictures shall be contained in a fireproof booth or enclosure constructed as required by law. The booth in which the picture machine is operated shall be provided

with an opening in its roof, or in the upper part of its side walls, leading to the outdoor air, and with a vent flue, which shall have a minimum cross sectional area of 50 square inches and shall be fireproof. When the booth is in use there shall be a constant current of air passing outward through said opening or vent flue at the rate of not less than 30 cubic feet per minute. The requirements of this section shall apply to portable booths and booths in open-air theatres, as well as to motion picture theatres.

SEC. 505. APPLICATION TO EXISTING THEATRES.—All the provisions of this article shall apply to existing places of entertainment where motion pictures are exhibited under common show licenses, in case the seating capacity be increased; and, in case the seating capacity be not increased, all the provisions of this article shall apply, except the provisions of Secs. 500, 501; subdivisions 1, 3 and 5 of Sec. 502 and subdivisions 3, 4 and 5 of Sec. 503, but the commissioner of licenses shall have power in his discretion to enforce the provisions of subdivisions 3 and 4 of Sec. 503, relating to exits and courts.

An existing place of entertainment seating 300 persons or less, where motion pictures are exhibited in conjunction with any other form of entertainment, must comply, before a reissuance of its license, with the provisions of article 25 of this chapter, relating to theatres seating more than 300 persons. But, if such existing place of entertainment shall discontinue all other form of entertainment except the exhibition of motion pictures, it may be licensed in accordance with the provisions of first paragraph of this section.

SEC. 506. OPEN-AIR MOTION PICTURE THEATRES.—The seating capacity of each open-air motion picture theatre, as defined in Sec. 30 of chapter 3 of this ordinance, shall be such as shall be prescribed by the commissioner of licenses. All such theatres shall conform to the following requirements:

1. AISLES.—The number and width of all aisles shall be as prescribed by the commissioner of licenses, but no aisle shall be less than 4 feet wide.

2. EXITS.—At least two separate exits, remote from each other, shall be provided, and no exit shall be less than 5 feet in width; for every 25 persons to be accommodated in excess of 300, the total width of exits shall be increased 1 foot. All exits must be indicated by signs and red lights, and doors must open outwardly.

3. SEATS.—Seats must be stationary, with backs 32 inches apart, and so arranged that no seat shall have more than 7 seats intervening between it and an aisle. Chairs must be either securely fastened to a wood or concrete floor, or all chairs in a row must be fastened together, and at least 4 rows must be securely fastened to one frame; except that, where refreshments are served, tables and unattached chairs or benches used with them may be permitted.

4. FLOORS.—The floor must be constructed either of wood, with sleepers, or concrete; it must extend at least 5 feet from the seats on all sides; provided, however, that, in the discretion of the commissioner of licenses, a gravel floor may be substituted for wood or concrete.

In addition to the foregoing requirements, the provisions of subdivisions 2 and 4 of Sec. 502, and Sec. 504 of this article shall apply to all open-air motion picture theatres.

ARTICLE 25

THEATRES AND OTHER PLACES OF AMUSEMENT

(In Effect March 30, 1915)

- Section 520. Application of article.
- 521. Buildings must be approved.
- 522. Auditorium walls.
- 523. Dressing rooms.
- 524. Fire extinguishing appliances.
- 525. Heating plant.
- 526. Lights.
- 527. Means of egress.
- 528. Partitions and walls.
- 529. Proscenium construction.
- 530. Protective curtain.
- 531. Roof of auditorium.
- 532. Seats.
- 533. Stage.
- 534. Miscellaneous requirements.
- 535. Storage rooms; workshops.
- 536. Use and occupancy.
- 537. Jurisdiction of fire commissioner.
- 538. Saving clause.

SEC. 520. APPLICATION OF ARTICLE.—Every theatre or opera house or other building intended to be used for theatrical or operatic purposes, or for public entertainment

of any kind, hereafter erected for the accommodation of more than 300 persons, shall be built to comply with the requirements of this article. No building which, at the time of the passage of this ordinance is not in actual use for theatrical or operatic purposes, and no building hereafter erected not in conformity with the requirements of this section, shall be used for theatrical or operatic purposes, or for public entertainment of any kind, until the same shall have been made to conform to the requirements of this article.

SEC. 521. BUILDINGS MUST BE APPROVED.—No building described in the preceding section of this article shall be opened to the public for theatrical or operatic purposes or for public entertainments of any kind, until the fire commissioner and the superintendent of buildings shall have approved the same in writing as conforming to the requirements of this article. Any such building in which departure from the provisions of this article has been made under an approval of the superintendent of buildings or the board of examiners, and which has, previous to May 1, 1916, been approved for use by the fire commissioner and the superintendent of buildings, may be approved as conforming to the requirements of this article so long as it is deemed reasonably safe by the fire commissioner and the superintendent of buildings, provided, however, that a building as to which the courts have held that a permit for its alteration or reconstruction is void, shall not be approved.

SEC. 522. AUDITORIUM WALLS.—Interior walls built of fireproofing materials shall separate the auditorium from the entrance vestibule, and from any room or rooms over the same, also from lobbies, corridors, refreshment or other rooms.

SEC. 523. DRESSING ROOMS.—Dressing rooms may be placed in the fly galleries provided that proper exits are secured therefrom to the fire escapes in the open courts, and that the partitions and other matters pertaining to dressing rooms shall conform to the requirements herein contained, but the stairs leading to the same shall be fireproof. All dressing rooms shall have an independent exit leading directly into a court or street, and shall be ventilated by windows in the external walls; and no dressing room shall be below the street level. All windows shall be arranged to open, and none of the windows in outside walls shall have fixed sashes, iron grills or bars.

SEC. 524. FIRE-EXTINGUISHING APPLIANCES.—In every building described in Sec. 520 of this article there shall be provided:

1. **HOSE.**—A proper and sufficient quantity of 2½-inch hose, not less than 100 feet in length, fitted with the regulation couplings of the fire department and with nozzles attached thereto, and with hose spanners at each outlet, shall always be kept attached to each hose attachment as the fire commissioner may direct.

2. **SPRINKLER SYSTEM.**—A separate and distinct system of automatic sprinklers, with fusible plugs, approved by the superintendent of buildings, supplied with water from a tank located on the roof over the stage and not connected in any manner with the standpipes, shall be placed at each side of the proscenium opening and on the ceiling or roof over the stage at such intervals as will protect every square foot of stage surface when said sprinklers are in operation. Automatic sprinklers shall also be placed, wherever practicable, in the dressing rooms under the stage and in the carpenter shop, paint rooms, store rooms and property room.

3. **STANDPIPES.**—Standpipes 4 inches in diameter shall be provided with hose attachment on every floor and gallery as follows, namely: One on each side of the auditorium in each tier, also on each side of the stage in each tier, and at least one in the property room and one in the carpenter's shop, if the same be contiguous to the building. All such standpipes shall be kept clear from obstruction. Said standpipes shall be separate and distinct, receiving their supply of water direct from the power pump or pumps, and shall be fitted with the regulation couplings of the fire department, and shall be kept constantly filled with water by means of an automatic power pump or pumps, of sufficient capacity to supply all the lines of hose when operated simultaneously, and said pump or pumps shall be supplied from the street main and be ready for immediate use at all times during any performance in said building. In addition to the requirements contained in this section, the standpipes shall also conform to the requirements contained in Sec. 581 of this chapter.

4. **MISCELLANEOUS.**—There shall also be kept in readiness for immediate use on the stage, at least 4 casks full of water, and 2 buckets to each cask. Said casks and buckets shall be painted red. There shall also be provided hand pumps or other portable fire-extinguishing apparatus and at least 4 axes and 2 25-foot hooks, 2 15-foot hooks and 2 10-foot hooks on each tier or floor of the stage.

SEC. 525. HEATING PLANT.—Every steam boiler which may be required for heating or other purposes shall be located outside of the building. The space allotted to the same shall be inclosed by walls of masonry on all sides, and the ceiling of such space shall be constructed of fireproof materials. All doorways in the walls of boiler-rooms shall have fire-proof doors. No floor register for heating shall be permitted. No coil or radiator shall be

placed in any aisle or passageway used as an exit, but all said coils and radiators shall be placed in recesses formed in the wall or partition to receive the same. All supply, return or exhaust pipes shall be properly incased and protected where passing through floors or near woodwork.

SEC. 526. LIGHTS. 1. ADEQUACY.—Every portion of the building devoted to the uses or accommodation of the public, also all outlets leading to the streets and including the open courts or corridors shall be well and properly lighted during every performance, and the same shall remain lighted until the entire audience has left the premises. When interior gas lights are not lighted by electricity, other suitable appliances, to be approved by the superintendent of buildings, shall be provided.

2. CORRIDORS AND PASSAGEWAYS.—All gas or electric lights in the halls, corridors, lobby or any other part of said buildings used by the audience, except the auditorium, must be controlled by a separate shut-off located in the lobby and controlled only in that particular place.

3. FIREPROOFING.—No gas or electric light shall be inserted in the walls, woodwork, ceilings or in any part of the building, unless protected by fireproof materials.

4. GAS CONNECTIONS.—Gas mains supplying the building shall have independent connections for the auditorium and the stage, and provision shall be made for shutting off the gas from the outside of the building.

5. NETTING.—All suspended or bracket lights surrounded by glass in the auditorium, or in any part of the building devoted to the public, shall be provided with proper wire netting underneath. All lights in passages and corridors in said buildings, wherever deemed necessary by the superintendent of buildings, shall be protected with proper wire network.

6. STAGE LIGHTS.—All stage lights shall have strong metal wire guards or screens, not less than 10 inches in diameter, so constructed that any material in contact therewith shall be out of reach of the flames of said stage lights, and must be soldered to the fixture in all cases. The footlights, in addition to the wire network, shall be protected with a strong wire guard and chain, placed not less than 2 feet distant from said footlights, and the trough containing them shall be formed of and surrounded by fireproof materials. All border lights shall be constructed according to the best-known methods, subject to the approval of the superintendent of buildings, and shall be suspended for 10 feet by wire rope.

7. VENTILATORS.—All ducts or shafts used for conducting heated air from the main chandelier, or from any other light or lights, shall be constructed of metal and made double, with an air space between.

SEC. 527. MEANS OF EGRESS. 1. EXITS TO STREETS.—Every theatre accommodating 300 persons shall have at least 2 exits; when accommodating 500 persons, at least 3 such exits shall be provided; these exits not referring to or including the exits to the open court at the side of the theatre. Every such building shall have one or more fronts on the streets, and in such fronts there shall be suitable means of entrance and exit for the audience, aggregating not less than 25 feet in width. The entrance of the main front of the building shall be not on a higher level from the sidewalk than four steps, unless approved by the superintendent of buildings. Each exit shall be at least 5 feet in width in the clear and provided with doors of iron or wood; if of wood, the doors shall be constructed as herein-before prescribed in this chapter. All of said doors shall open outwardly, and shall be fastened with movable bolts, the bolts to be kept drawn during performances. Amended by ord. approved August 8, 1916.

2. EXITS TO COURTS.—In addition to aforesaid entrances and exits on the street, there shall be reserved for service in case of an emergency an open court or space on each side of the auditorium not bordering on a street. The unobstructed, clear width of every such open court or space shall be not less than 8 feet where the total number of persons to be accommodated in the auditorium is not over 700, increasing proportionately in width above 8 feet in the ratio of 1 foot for every five hundred persons above 700 to be accommodated. Every such open court or space shall extend, from each and every exit required to lead thereto, to a street or open public space and opening thereon, either directly or through a corridor passageway of fireproof construction not less than 10 feet high in the clear, having an unobstructed clear width equal to that required for the open court or space and separated completely by solid walls, floors and ceilings from the building or structure through which it passes, provided that no such corridor or passageway shall pass under any portion of the auditorium or stage. From the auditorium opening into the said open court or on a street, there shall be not less than 2 exits on each side in each tier from and including the parquet and the gallery. The said open courts, spaces, corridors and passageways shall not be used for storage purposes, or for any purpose whatsoever except for exit and entrance from and to the auditorium and stage, and must be kept free and clear during performances. Any open court or space may be used in common for 2 or more auditoriums, provided the unobstructed clear width of such open court or space is equal to that required for the total number of per-

sons to be accommodated in all the auditoriums opening on the same. Amended by ord. approved August 8, 1916.

3. **DOORWAYS OF EXITS.**—Doorways of exit or entrance for the use of the public shall be not less than 5 feet in width, and for every additional 100 persons or portions thereof to be accommodated, in excess of 500, an aggregate of 20 inches additional exit width must be allowed. All doors of exit or entrance shall open outwardly and be hung to swing in such a manner as not to become an obstruction in a passage or corridor, and no such doors shall be closed and locked during any representation, or when the building is open to the public.

4. **FOYERS, LOBBIES AND CORRIDORS.**—The aggregate capacity of the foyers, lobbies, corridors, passages and rooms for the use of the audience, not including toilet rooms or aisles between seats, shall on each floor or gallery be sufficient to contain the entire number to be accommodated on said floor or gallery, in the ratio of 150 square feet of clear floor space for every 100 persons. The level of said corridors at the front entrance to the building shall be not greater than one step above the level of the sidewalk where they begin at the street entrance. During the performance the doors or gates in the corridors shall be kept open by proper fastenings; at other times they may be closed and fastened by movable bolts. Amended by ord. approved August 8, 1916.

5. **AISLES.**—All aisles on the respective floors of the auditorium shall be not less than 3 feet wide where they begin and shall be increased in width toward the exits in a ratio of $1\frac{1}{2}$ inches to 5 running feet. Where exits, corridors, passages or crossover aisles are provided at both ends of any aisle, the said aisle shall be uniform in width and not less than the average width obtained by increasing the width of the aisle from the starting point to the end, as hereinbefore prescribed. Amended by ord. approved August 8, 1916.

6. **GRADIENTS.**—Gradients or inclined planes shall be employed instead of steps where possible to overcome slight difference of level in or between aisles, corridors or passages. To overcome any difference of level in and between courts, corridors, lobbies, passages and aisles, gradients shall be employed of not over 1 foot in 12 feet, with no perpendicular risers, except that in aisle runs of not more than 10 feet in length they may be 1 in 8. Amended by ord. approved August 8, 1916.

7. **GALLERY EXITS.**—Distinct and separate places of exit and entrance shall be provided for each gallery above the first. A common place of exit and entrance may serve for the main floor of the auditorium and the first gallery, provided its capacity be equal to the aggregate capacity of the outlets from the main floor and the said gallery. No passage leading to any stairway communicating with any entrance or exit shall be less than 4 feet in width in any part thereof. From the auditorium opening into the said open courts or on the side street, there shall be not less than 2 exits on each side in each tier from and including the parquet and each and every gallery.

8. **STAIRCASES TO GALLERIES.**—Where the seating capacity is for more than 1,000 people, there shall be at least 2 independent staircases, with direct exterior outlets, provided for each gallery in the auditorium, where there are not more than 2 galleries, and the same shall be located on opposite sides of said galleries. Where there are more than 2 galleries, 1 or more additional staircases shall be provided, the outlets from which shall communicate directly with the principal exit or other exterior outlets. All such staircases shall be of width proportionate to the seating capacity as elsewhere herein prescribed. Where the seating capacity is for 1,000 people, or less, 2 direct lines of staircases only shall be required, located on opposite sides of the galleries, and in both cases shall extend from the sidewalk level to the upper gallery, with outlets from each gallery to each of said staircases. All inside stairways leading to the upper galleries of the auditorium shall be inclosed on both sides with walls of fireproof materials. Stairs leading to the first or lower gallery may be left open on one side, in which case they shall be constructed as herein provided for similar stairs leading from the entrance hall to the main floor of the auditorium. But in no case shall stairs leading to any gallery be left open on both sides. No door shall be open immediately upon a flight of stairs, but a landing at least the width of the door shall be provided between such stairs and such door.

9. **STAGE STAIRCASES.**—At least 2 independent staircases, with direct exterior outlets, shall also be provided for the service of the stage and shall be located on the opposite sides of the same.

10. **STAIRWAYS.**—All staircases for the use of the audience shall be inclosed with walls of brick, or of fireproof materials approved by the superintendent of buildings, in the stories through which they pass, and the openings to said staircases from each tier shall be of the full width of said staircase. All stairs within the building shall be constructed of fireproof material throughout. Stairs from balconies and galleries shall not communicate with the basement or cellar. All stairs shall have treads of uniform width and risers of uniform height throughout in each flight. Stairways serving for the exit of 50 people shall be at least 4 feet wide between railings or between walls, and for every additional 50 people to be accommodated 6 inches must be added to their width. The width of all stairs shall be measured in the clear between hand-rails. In no case shall the risers of any stairs exceed $7\frac{1}{2}$ inches in

height, nor shall the treads, exclusive of nosings, be less than $10\frac{1}{2}$ inches wide in straight stairs. No circular or winding stairs for the use of the public shall be permitted. When straight stairs return directly on themselves, a landing of the full width of both flights without any steps, shall be provided. The outer line of landings shall be curved to a radius of not less than 2 feet to avoid square angles. Stairs turning at an angle shall have a proper landing without winders introduced at said turn. In stairs, when 2 side flights connect with one main flight, no winders shall be introduced, and the width of the main flight shall be at least equal to the aggregate width of the side flights. All stairs shall have proper landings introduced at convenient distances.

11. **STAIRWAY HAND-RAILS.**—All inclosed staircases shall have, on both sides, strong hand-rails firmly secured to the wall about 3 inches distant therefrom and about 3 feet above the stairs, but said hand-rails shall not run on level platforms and landings where the same is more in length than the width of the stairs. All staircases 8 feet and over in width shall be provided with a centre hand-rail of metal, not less than 2 inches in diameter, placed at a height of about 3 feet above the centre of the treads and supported on wrought metal or brass standards of sufficient strength, placed not nearer than 4 feet nor more than 6 feet apart, and securely bolted to the treads or risers of stairs, or both, and at the head of each flight of stairs, on each landing, the post or standard shall be at least 6 feet in height, to which the rail shall be secured.

12. **FIRE-ESCAPES.**—There shall be balconies not less than 6 feet in width in the said open court or courts at each level or tier above the parquet, on each side of the auditorium, of sufficient length to embrace the 2 exits, and from said balconies there shall be staircases extending to the ground level, with a rise of not over $8\frac{1}{2}$ inches to a step and not less than 9 inches tread, exclusive of the nosing. The staircase from the upper balcony to the next below shall be not less than 48 inches in width clear, and from the first balcony to the ground 4 feet in width in the clear where the seating capacity of the auditorium is for 1,000 people or less, 4 feet 6 inches in the clear where above 1,000 and not more than 1,800 people, and 5 feet in the clear where above 1,800 people and not more than 2,500 people, and not over 5 feet 6 inches in the clear where above 2,500 people. All the before mentioned balconies and staircases shall be constructed of iron throughout, including the floors, and of ample strength to sustain the load to be carried by them, and they shall be covered with a metal hood or awning, to be constructed in such manner as shall be approved by the superintendent of buildings. Where one side of the building borders on the street, there shall be balconies and staircases of like capacity and kind, as before mentioned, carried to the ground.

13. **DIAGRAM OF EXITS.**—A diagram or plan of each tier, gallery or floor, showing distinctly the exits therefrom, each occupying a space not less than 15 square inches, shall be printed in black lines in a legible manner on the programme of the performance. Every exit shall have over the same on the inside the word "Exit" painted in legible letters not less than 8 inches high.

SEC. 528. PARTITIONS AND WALLS.—The partitions in that portion of the building which contains the auditorium, the entrance and vestibule and every room and passage devoted to the use of the audience shall be constructed of fireproof materials including the furring of outside or other walls. The walls separating the actors' dressing rooms from the stage and the partitions dividing the dressing rooms, together with the partitions of every passageway from the same to the stage, and all other partitions on or about the stage, shall be constructed of fireproof material approved by the superintendent of buildings. All doors in any of said partitions shall be fireproof.

SEC. 529. PROSCENIUM CONSTRUCTION.—A fire wall, built of brick, shall separate the auditorium from the stage. The same shall extend at least 4 feet above the stage roof, or the auditorium roof, if the latter be the higher, and shall be coped. Above the proscenium opening there shall be an iron girder of sufficient strength to safely support the load above, and the same shall be covered with fireproof materials to protect it from the heat. Should there be constructed an orchestra over the stage, above the proscenium opening, the said orchestra shall be placed on the auditorium side of the proscenium fire wall, and shall be entered only from the auditorium side of said wall. The molded frame around the proscenium opening shall be formed entirely of fireproof materials; if metal be used, the metal shall be filled in solid with non-combustible material and securely anchored to the wall with iron. No doorway or opening through the proscenium wall, from the auditorium, shall be allowed above the level of the first floor, and such first floor openings shall have fireproof doors on each face of the wall, and the doors shall be hung so as to be opened from either side at all times.

SEC. 530. PROTECTIVE CURTAIN.—The proscenium opening shall be provided with a fireproof metal curtain, or a curtain of asbestos or other fireproof material approved by the superintendent of buildings, sliding at each end with iron grooves, securely fastened to the brick wall and extending into such grooves to a depth not less than 6 inches on each side of the opening. The proscenium curtains shall be placed at least 3 feet distant from the foot-lights, at the nearest point. Said fireproof curtain shall be raised at the commencement

of each performance and lowered at the close thereof, and be operated by approved machinery for that purpose.

SEC. 531. ROOF OF AUDITORIUM.—The roof over the auditorium and the entire main floor of the auditorium and vestibule, also the entire floor of the second story of the front superstructure over the entrance, lobby and corridors, and all galleries and support for the same in the auditorium shall be constructed of iron and steel and fireproof materials, not excluding the use of wood floorboards and necessary sleepers to fasten the same to, but such sleepers shall not mean timbers of support, and the space between the sleepers, excepting a portion under the stepping in the galleries, which shall be properly fire stopped, shall be solidly filled with incombustible material up to under side of the floor boards.

SEC. 532. SEATS.—All seats in the auditorium, excepting those contained in boxes, shall be not less than 32 inches from back to back, measured in a horizontal direction, and firmly secured to the floor. There shall be not more than 14 seats in any row extending from one aisle to another, nor more than 7 seats in any row extending from one aisle to a wall. No stool or seat shall be placed in any aisle. All platforms in galleries formed to receive the seats shall not be more than 21 inches in height of rises, nor less than 32 inches in width of platform. Amended by ord. approved August 8, 1916.

SEC. 533. STAGE. 1. CONSTRUCTION.—All that portion of the stage not comprised in the working of scenery, traps and other mechanical apparatus for the presentation of a scene usually equal to the width of the proscenium opening, shall be built of iron or steel beams filled in between with fireproof material, and all girders for the support of said beams shall be of wrought iron or rolled steel. The fly galleries entire, including pin-rails, shall be constructed of iron or steel, and the floors of said galleries shall be composed of iron or steel beams, filled with fireproof materials, and no wood boards or sleepers shall be used as covering over beams, but the said floors shall be entirely fireproof. The rigging loft shall be fireproof.

2. SKYLIGHTS.—There shall be provided over the stage metal skylights of an area or combined area of at least one-eighth the area of said stage, fitted up with sliding sash and glazed with double thick sheet glass not exceeding 1-12 of an inch thick, and each pane thereof measuring not less than 300 square inches and the whole of which skylight shall be so constructed as to open instantly on the cutting or burning of a hempen cord, which shall be arranged to hold said skylights closed, or some other equally simple approved device for opening them may be provided. Immediately underneath the glass of said skylights there shall be wire netting, but wire glass shall not be used in lieu of this requirement.

3. SCENERY AND FITTINGS.—All stage scenery, curtains and decorations made of combustible material, and all woodwork on or about the stage, shall be painted or saturated with some non-combustible material or otherwise rendered safe against fire, and the finishing coats of paint applied to all woodwork through the entire building shall be of such kind as will resist fire to the satisfaction of the superintendent of buildings having jurisdiction.

SEC. 534. MISCELLANEOUS REQUIREMENTS. 1. CEILINGS.—The ceiling under each gallery shall be entirely formed of fireproof materials. The ceiling of the auditorium shall be formed of fireproof materials.

2. CEILING COVERINGS.—None of the walls or ceilings shall be covered with wood sheathing, canvas or any combustible material. But this shall not exclude the use of wood wainscoting to a height not to exceed 6 feet, which shall be filled in solid between the wainscoting and the wall with fireproof materials.

3. FRONTS OF GALLERIES.—The fronts of each gallery shall be formed of fireproof materials, except the capping, which may be made of wood.

4. LATHING.—All lathing, whenever used, shall be of wire or other metal.

5. SHELVING AND CUPBOARDS.—All shelving and cupboards in each and every dressing room, property room or other storage rooms, shall be constructed of metal, slate or some fireproof material.

SEC. 535. STORAGE ROOMS; WORKSHOPS.—No workshop, storage or general property room shall be allowed above the auditorium or stage, or under the same or in any of the fly galleries. All of said rooms or shops may be located in the rear or at the side of the stage, but in such cases they shall be separated from the stage by a brick wall, and the openings leading into said portions shall have fireproof doors on each side of the openings, hung to iron eyes built into the wall.

SEC. 536. USE AND OCCUPANCY. 1. RESTRICTIONS.—No portion of any building hereafter erected or altered, used or intended to be used for theatrical or other purposes as in this section specified, shall be occupied or used as a hotel, boarding or lodging house, factory, workshop, or manufactory, or for storage purposes, except as may be hereinafter specially provided for. This restriction relates not only to that portion of the building which

contains the auditorium and the stage, but applies also to the entire structure in conjunction therewith. No store or room contained in the building, or the offices, stores or apartments adjoining, as aforesaid, shall be let or used for carrying on any business, dealing in articles designated as specially hazardous in the classification of the New York Board of Fire Underwriters, or for manufacturing purposes. No lodging accommodations shall be allowed in any part of the building communicating with the auditorium. When located on a corner lot, that portion of the premises bordering on the side street and not required for the uses of the theatre may, if such portion be not more than 25 feet in width, be used for offices, stores or apartments, provided the walls separating this portion from the theatre proper are carried up solidly to and through the roof, and that a fireproof exit is provided for the theatre on each tier, equal to the combined width of exits opening on opposite sides in each tier, communicating with balconies and staircases leading to the street in manner provided elsewhere in this section; said exit passages shall be entirely cut off by brick walls from said offices, stores or apartments, and the floors and ceilings in each tier shall be fireproof.

2. ABOVE THEATRE.—Nothing herein contained shall prevent a roof garden, art gallery or rooms for similar purposes being placed above a theatre or public building, provided the floor of the same, forming the roof over such theatre or building, shall be constructed of iron or steel and fireproof materials, and that said floor shall have no covering boards or sleepers of wood, but shall be of tile or cement. Every roof over said garden or rooms shall have all supports and rafters of iron or steel, and be covered with glass or fireproof materials, or both, but no such roof garden, art gallery or room for any public purposes shall be placed over or above that portion of any theatre or other building which is used as a stage.

SEC. 537. JURISDICTION OF FIRE COMMISSIONER.—The stand pipes, gas pipes, electric wires, hose, foot lights and all apparatus for the extinguishing of fire or guarding against the same, as in this article specified, shall be in charge and under control of the fire department, and the fire commissioner is hereby directed to see that the provisions of this article relating thereto are carried out and enforced.

SEC. 538. SAVING CLAUSE.—The provisions of the foregoing article shall not be construed to mean or made to apply to any theatre, opera house, or building intended to be used for theatrical or operatic purposes, lawfully erected prior to June 3, 1904, nor to any public dance hall which was approved by the superintendent of buildings having jurisdiction and which was licensed as a public dance hall on September 30, 1916.

ARTICLE 26

(Repealed)

ARTICLE 27

ELEVATORS

(In Effect March 14, 1916)

Section 560. Definitions.

- 561. Rules.
- 562. Permits.
- 563. Certificate.
- 564. Record of passenger elevators.
- 565. Inspection.
- 566. Riding on elevators restricted.
- 567. Operators.
- 568. Accidents.

SEC. 560. DEFINITIONS.—For the purposes of this article:

- a. The term elevator shall mean any device within or in connection with a building or structure used for carrying persons or things upward or downward.
- b. The term passenger elevator shall mean and include any elevator designed and used for carrying persons other than those necessary for its safe operation or for the handling of things carried by it.
- c. The term freight elevator shall mean and include any elevator designed and used for the carrying of things and of such persons only as are necessary for its safe operation of the handling of things carried by it.
- d. The term amusement device shall mean and include all mechanically operated devices which are used to convey persons in any direction as a form of amusement.

SEC. 561. RULES.—The superintendent of buildings shall make rules consistent with the provisions of this article, regulating, with a view to safety, the construction, maintenance and operation of all elevators and amusement devices, now existing or hereafter installed.

SEC. 562. PERMITS.—No passenger or freight elevator shall hereafter be installed or altered in any building nor shall any amusement device be hereafter constructed or altered until the owner or lessee, or the agent, architect or contractor of either, shall have submitted to the superintendent of buildings in such form as the superintendent may prescribe, an application accompanied by plans and drawings showing the proposed construction and mode of operation, and such application has been approved by the superintendent and a permit has been issued by him. Repairs to elevators and amusement devices may be made without filing such application, except when such repairs include a change in the type of elevator or of its motive power, or when any change in safety devices or operating mechanism is made.

SEC. 563. CERTIFICATE.—Whenever a passenger or freight elevator or an amusement device is hereafter installed or constructed, it shall be unlawful for the owner or lessee to operate or permit the operation or use of the same until a certificate shall have been obtained from the superintendent of buildings that such elevator or amusement device has been inspected and has been found to be safe. The superintendent of buildings shall within a reasonable time after being requested to do so inspect or cause to be inspected any elevator or amusement device hereafter installed or constructed, and if the same is found to be safe and in conformity with the provisions of this article and the rules adopted thereunder, shall issue a certificate to that effect. Nothing herein contained shall prevent the temporary use under a certificate issued by the superintendent of buildings of any elevator during construction, provided a notice is conspicuously posted on or in connection with such elevator to the effect that such elevator has not been officially approved.

SEC. 564. RECORD OF PASSENGER ELEVATORS.—Every passenger elevator shall be given a serial number for purposes of identification. In the case of elevators hereafter installed such serial number shall be assigned when the first certificate is issued, and in the case of existing elevators, as soon as inspection can be made for that purpose. A docket of all passenger elevators shall be kept in each borough, giving under the corresponding serial number a description of its location sufficient for identification, together with such other information as type of construction, motive power, rise, rated speed, inspection, etc., as the superintendent of buildings may deem desirable. The owner or lessee, or agent of either, shall cause such number, together with the most recent certificate of inspection, to be attached or posted in the elevator car in the manner prescribed by the rules.

SEC. 565. INSPECTION.—The superintendent of buildings shall cause an inspection of all passenger elevators to be made at least once in every three months and of freight elevators and amusement devices at least twice in each year. Upon notice from the superintendent of buildings, or his duly authorized representative, any repairs found necessary to such elevators or amusement devices shall be made without delay by the owner or lessee, and in case defects are found to exist in the continued use of such elevator or amusement device as are dangerous to life or limb, then the use of such elevator or amusement device shall cease, and it shall not again be used until a certificate shall be first obtained from said superintendent of buildings that such elevator or amusement device has been made safe. After every inspection which shows any elevator or amusement device to be safe and in conformity with the requirements of this article and the rules adopted thereunder, the superintendent of buildings shall issue a certificate to that effect.

SEC. 566. RIDING ON ELEVATORS RESTRICTED.—It shall be unlawful for any person, other than the operator or those necessary to handle freight to ride on, or for the owner or lessee of any elevator knowingly to permit any person to ride on any elevator other than a passenger elevator. Every freight elevator shall have a notice posted conspicuously thereon as follows: THIS IS NOT A PASSENGER ELEVATOR. IT IS UNLAWFUL FOR ANY PERSON OTHER THAN THE OPERATOR OR THOSE NECESSARY TO HANDLE FREIGHT, TO RIDE ON THIS ELEVATOR.

SEC. 567. OPERATORS.—Except as may be specifically provided in any other law or ordinance, every passenger elevator, except full automatic push button elevators and escalators, must be in charge of a competent operator of reliable and industrious habits, not less than eighteen years of age, with sufficient previous experience in running an elevator under the instruction of a competent person. No operators of amusement devices known as electrically operated scenic railroads shall be employed who have not attained the age of twenty-one years and who have not secured a certificate of competency from the superintendent of buildings. In case the superintendent of buildings shall find that the person engaged in running an elevator is incompetent or not qualified, the owner or lessee of such elevator shall, upon notice from the superintendent of buildings, at once discontinue the operation of such elevator by such operator. No person shall employ or permit any person to operate any

passenger elevator who does not possess the qualifications prescribed therefor by this or any other law or ordinance.

SEC. 568. ACCIDENTS.—The owner or lessee, or person in charge of any passenger or freight elevator or amusement device shall immediately notify the superintendent of buildings of each and every accident to a person or damage to apparatus on, about or in connection with such elevator or amusement device, and shall afford the superintendent of buildings or his representative every facility for investigating such accident or damage. The superintendent of buildings shall without delay, after being notified, make an investigation, and shall place on file in the bureau of buildings a full and complete report of such investigation. Such report shall give in detail all material facts and information available and the cause or causes so far as they can be determined, and shall be open to public inspection at all reasonable hours. When an accident involves the failure or destruction of any part of the construction or operating mechanism of a passenger elevator or amusement device, said passenger elevator or amusement device shall not be used until it has been made safe, and the superintendent of buildings may, if deemed necessary, order the discontinuance of the same until a certificate has been issued by him for its use, but no part of the damaged construction or operating mechanism shall be removed from the premises until permission to do so has been granted by the superintendent of buildings or his representative.

ARTICLE 28

FIRE EXTINGUISHING APPLIANCES

(In Effect March 7, 1916)

Section 580. General provisions.

581. Standpipes.

SEC. 580. GENERAL PROVISIONS.—Except as otherwise specifically provided in this article or by any law or ordinance, all buildings now existing or hereafter erected shall be provided with such tanks, standpipes, automatic sprinklers, hose nozzles, wrenches, fire extinguishers, hooks, axes and such other appliances as may be required by and conforming to the rules of the fire commissioner, adopted or amended in the manner prescribed by this chapter for the rules of the superintendent of buildings.

SEC. 581. STANDPIPES. 1. WHEN REQUIRED.—Standpipes, constructed and installed as hereinafter required, shall be provided:

- a. In every building now existing and exceeding eighty-five feet in height, which is not already provided with a three-inch or larger standpipe.
- b. In every building hereafter erected or altered to exceed eighty-five feet in height; and
- c. In every building exceeding ten thousand square feet in area.

2. SIZE.—Standpipes hereafter placed in any building shall not be less than four inches in diameter for buildings or parts thereof not exceeding one hundred and fifty feet in height, not less than six inches in diameter for buildings or parts thereof exceeding one hundred and fifty feet and not exceeding two hundred and fifty feet in height, and not less than eight inches in diameter for buildings or parts thereof exceeding two hundred and fifty feet in height.

3. NUMBER AND LOCATION.—The number of standpipes in any building shall be such that all parts of each story are within the reach of at least one stream supplied by hose not exceeding one hundred feet in length. When a building requiring standpipes faces on more than one street at least one standpipe shall be installed for each street front, provided that for intersecting street fronts one standpipe shall be sufficient for each intersection. So far as practicable standpipes shall be placed within stair enclosures; otherwise they shall be as near the stairs as possible. All standpipes shall extend from the lowest story to and above the roof.

4. CONSTRUCTION.—All standpipes hereafter installed shall be constructed as prescribed by the rules of the fire commissioner and shall be provided with such outlets and equipped with such appliances as required by said rules. All standpipes shall extend to the street and shall be provided at or near the sidewalk with approved Siamese connections. When there is more than one standpipe in any building all shall be cross-connected in an approved manner below the sidewalk level.

ARTICLE 29

PLUMBING AND OTHER SYSTEMS OF PIPING

(In Effect March 30, 1915)

Section 600. Rules.

- 601. Shut-off valves.
- 602. Tests of plumbing.
- 603. Tests of gas-piping.
- 604. Registration of plumbers.

SEC. 600. RULES.—The plumbing and drainage systems, water supply pipes, gas-piping, steam or hot water heating or power systems, refrigerating systems and other systems of pipes or apparatus for holding or conveying gases, vapors or fluids hereafter installed and maintained in or upon any building in the city shall conform to such rules as may be provided for by law or may be found necessary for the protection of life, health or property, and adopted by the superintendent of buildings. No person shall use or permit the use of any such system, piping or apparatus installed or maintained in violation of any of the provisions of this article or the rules adopted hereunder. Said rules, hereafter adopted, and any changes thereof, shall be published in the City Record on eight successive Mondays before they shall become operative.

Nothing herein contained or in the rules adopted hereunder shall require the alteration or reconstruction of any existing work that was lawfully installed, nor prevent repairs or the addition of new fixtures to existing work in conformity with the practice followed in the original installation; provided, however, that when such repairs involve the removal or alteration of more than one-half of the existing work affected by the repairs, the rules in force at the time of such repairs shall apply.

SEC. 601. SHUT-OFF VALVES.—Every building hereafter erected and also every existing building, other than residence buildings occupied exclusively by one or two families and having not more than 15 sleeping rooms, which may be supplied from some outside source with gas, vapor or fluid, except potable waters, shall have a conveniently accessible stopcock or other suitable device fixed to the supply pipes leading into the building at a place outside of the building, so arranged as to allow the supply to be shut off. Such stopcock or other device shall be so marked as to indicate either the contents and purposes of the supply pipe to which it is attached or the company to which the device belongs.

SEC. 602. TESTS OF PLUMBING.—No person shall use or permit the use of any new system of plumbing and drainage hereafter installed in any building before the same has been tested under the supervision of the bureau of buildings and in accordance with its rules, to insure the tightness of the system, nor until a proper and adequate water supply has been provided. The superintendent of buildings shall, within a reasonable time after being requested to do so, cause to be inspected and tested any system of plumbing and drainage that is ready for such inspection and test, and, if the work is found satisfactory and the test requirements are complied with, shall issue a certificate to that effect. Nothing herein contained shall prevent the inspection and test of part of a system or the issuance of a partial certificate, nor prevent the use of such part of a larger system provided that such part constitutes by itself a complete system properly tested and supplied with water.

SEC. 603. TESTS OF GAS-PIPING.—No person shall use or permit the use of any new system or an extension of an old system of gas-piping in any building before the same has been inspected and tested under the supervision of the bureau of buildings and in accordance with its rules, to insure the tightness of the system. The superintendent of buildings shall, within a reasonable time after being requested to do so, cause to be inspected and tested any system of gas-piping that is ready for such inspection and test, and if the work is found satisfactory and the test requirements are complied with, he shall issue a certificate to that effect. Nothing herein contained shall prevent the use of existing systems of gas-piping without further inspection or test, unless the superintendent of buildings has reason to believe that defects exist which make the system dangerous to life or property.

SEC. 604. REGISTRATION OF PLUMBERS.—Once in each year every employing or master plumber carrying on his trade, business or calling in the city shall register his name and address at the office of the bureau of buildings in the borough of the said city in which he performs work, under such rules as the said bureau may prescribe. No person, corporation or copartnership shall engage in or carry on the trade, business or calling of employing or master plumber in the city unless the name and address of such person and the president, secretary or treasurer of the corporation, or of each and every member of the copartnership shall have been registered as above provided.

ARTICLE 30

(Repealed)

ARTICLE 31

UNSAFE BUILDINGS AND COLLAPSED STRUCTURES

(In Effect December 21, 1915)

- Section 630. Removal or repair of buildings.
 631. Record and notice of unsafe building.
 632. Voluntary abatement.
 633. Disregard of notice; survey.
 634. Judicial review of survey.
 635. Repair or removal under precept.
 636. Provision for expense of executing precept.
 637. Return of precept; reimbursement of city.
 638. Fallen buildings; buildings imminently dangerous.
 639. Emergency fund.

SEC. 630. REMOVAL OR REPAIR OF BUILDINGS.—Any building or part of a building, staging or other structure that from any cause may now be, or shall at any time hereafter become dangerous or unsafe, shall be taken down and removed, or made safe and secure.

SEC. 631. RECORD AND NOTICE OF UNSAFE BUILDING.—Immediately upon the receipt of a report by any officer or employee of the bureau of buildings that a building or part of a building, staging or structure is unsafe or dangerous, the superintendent of buildings shall cause the same to be entered upon a docket of unsafe buildings to be kept in his bureau; and the owner, or some one of the owners, executors, administrators, agents, lessees, or any other person who may have a vested or contingent interest in the same, shall be served with a printed or written notice containing a description of the premises or structure deemed unsafe or dangerous, a statement of the particulars in which the building or structure is unsafe or dangerous, and an order requiring the same to be made safe and secure or removed, as may be deemed necessary by the superintendent of buildings. Such notice shall require the person thus served to immediately certify to the superintendent his assent or refusal to secure or remove the same.

SEC. 632. VOLUNTARY ABATEMENT.—If the person served with a notice specified in Sec. 631 shall immediately certify his assent to the securing or removal of said unsafe or dangerous building, premises or structure, he shall be allowed twenty-four hours after the service of such notice in which to commence the securing or removal of the same; and he shall employ sufficient labor and assistance to secure or remove the same as expeditiously as can be done.

SEC. 633. DISREGARD OF NOTICE; SURVEY. 1. NOTICE OF SURVEY.—Upon the refusal or neglect of the person served with the notice for which provision is made in Secs. 631 and 632 to comply with any of the requirements thereof, a further notice shall be served upon him, in the manner heretofore prescribed, notifying him that a survey of the premises named in said notice will be made at the time and place therein named, which time shall not be less than twenty-four hours nor more than three days from the time of the service of said notice, by three competent persons, of whom one shall be the superintendent of buildings or an inspector designated in writing by said superintendent, another shall be an architect, appointed either by the New York Chapter or the Brooklyn Chapter of the American Institute of Architects, or by the New York Society of Architects, and the third shall be a practical builder, engineer or architect appointed by the person thus notified. In case the person served with such notice shall neglect or refuse to appoint such surveyor, the other two surveyors shall make the survey, and in case of a disagreement of the latter, shall appoint a third person to take part in such survey, who shall also be a practical builder, engineer or architect of at least ten years' practice, and whose decision shall be final. The notice shall also set forth that in case the premises referred to therein shall be reported unsafe or dangerous under such survey, the said report will be placed before the Supreme Court as indicated in the notice, and that a trial upon the allegations and statements contained in said report, be the report of said surveyors more or less than is contained in the said notice of survey, will be had before said court at a time and place therein named, to determine whether said unsafe or dangerous building or premises shall be repaired and secured or taken down and removed, and that a report of said survey, reduced to writing, shall constitute the issue to be placed before the court for trial.

2. **POSTING REPORT OF SURVEY.**—A copy of the report of the survey shall be posted on the building the subject thereof by the persons holding the survey immediately on their signing such report.

3. **COMPENSATION OF SURVEYOR.**—The architect appointed by the Chapters of the American Institute of Architects, as hereinbefore provided, who may act on any survey called in accordance with the provisions of this article, and the third surveyor who may have been called in the case of disagreement provided for in this section, shall be entitled to and receive each the sum of \$25, to be paid by the comptroller upon the voucher of the superintendent of buildings. A cause of action is hereby created for the benefit of the city against the owner of said building, staging or structure, and of the lot or parcel of land on which the same is situated, for the amount so paid with interest. The amount so collected shall be paid over to the comptroller in reimbursement of the amounts paid by him as aforesaid.

SEC. 634. JUDICIAL REVIEW OF SURVEY. 1. INSTITUTION OF PROCEEDINGS.—Whenever the report of any such survey had as aforesaid shall recite that the buildings, premises or structure thus surveyed is unsafe or dangerous, the corporation counsel shall at the time specified in the notice place such notice and report before the justice holding a special term of the court named in the notice.

2. **PRECEDENCE OF PROCEEDING.**—The determination of the issue in an unsafe building proceeding shall have precedence over every other business of such court, and a trial of the issue shall be held without delay at the time specified in the notice by the justice holding said court, or a referee, whose decision or report in the matter shall be final, unless a jury trial is demanded, in which case the verdict of such jury shall be final.

3. **POSTPONEMENT OF TRIAL.**—If for any reason the issue shall not be tried at the time specified in said notice, or to which the trial may be adjourned, the same may be brought to trial at any time thereafter by the superintendent of buildings without a new survey, upon not less than three days' notice of trial to the person upon whom the original notice was served, or to his attorney. Such notice of trial may be served in the same manner as said original notice.

4. **PRECEPT TO ABATE.**—Upon the rendition of a verdict or decision of the court or referee, if the said verdict or decision shall find the said building, premises or structure to be unsafe or dangerous, the justice trying the cause, or to whom the report of the referee trying said cause shall be presented, shall immediately issue a precept directed to the superintendent of buildings, reciting said verdict or decision, and commanding him forthwith to repair and secure, or take down or remove, as the case may be, the unsafe or dangerous building or part thereof, staging, structure or other premises that shall have been named in the said report, in accordance with such verdict or decision.

SEC. 635. REPAIR OR REMOVAL UNDER PRECEPT. 1. EXECUTION OF PRECEPT.—Upon receiving a precept issued under the provisions of the preceding section, the superintendent of buildings referred to therein shall immediately proceed to execute the same, as therein directed, and may employ such labor and assistance and furnish such materials as may be necessary for that purpose, provided, nevertheless, that immediately upon the issuing of said precept, the owner of said building or part thereof, staging or structure, or premises, or any party interested therein, upon application to the superintendent of buildings, shall, upon the payment of all costs and expenses incurred up to that time by the city, be allowed to perform the requirements of the precept at his own proper cost and expense, if the same shall be done immediately and in accordance with the requirements of said precept. The superintendent of buildings shall have authority to modify the requirements of any precept upon application to him therefor, in writing, by the owner of said building or part thereof, staging or structure, or his representative, when he shall be satisfied that such change shall secure equally well the safety of said building, or part thereof, staging or structure.

2. **INTERFERENCE PROHIBITED.**—It shall be unlawful for any person, whether interested or not in the property affected, to interfere, obstruct or hinder the superintendent of buildings or his representative or any person who, acting under the authority conferred on him by such superintendent, is performing the work directed by a precept issued out of any court as in this article provided, or ordered by the superintendent in accordance with such precept under the provisions of this chapter.

SEC. 636. PROVISION FOR EXPENSE OF EXECUTING PRECEPT.—In and about all preliminary proceedings, as well as the carrying into effect any order of the court or any precept issued by any court, the superintendent of buildings may make requisition upon the comptroller for such amount of money as shall be necessary to meet the expenses thereof; and upon the approval of the statement of expenses thereof by any justice of the court from which the said order or precept was issued, the comptroller shall pay the same, and for that purpose shall borrow and raise upon revenue bonds, issued as provided by law, the several amounts that may from time to time be required, which shall be reimbursed by the payment of the amount and interest at six per cent. out of any judgment obtained as hereinafter provided, when said amount and interest shall have been collected.

SEC. 637. RETURN OF PRECEPT; REIMBURSEMENT OF CITY.—Upon compliance with any precept issued to him in an unsafe building proceeding, the superintendent

of buildings shall make return thereof, with an indorsement of the action thereunder and the cost and expenses thereby incurred, to the justice then holding the special term of the court from which such precept issued, and thereupon said justice shall tax and adjust the amount indorsed upon said precept, and shall adjust and allow the disbursements of the proceedings, together with the preliminary expenses of searches and surveys thereof, which shall be inserted in the judgment in said action or proceeding, and shall render judgment for such amount, and for the sale of the said premises in the said notice named, together with all the right, title and interest that the person named in the said notice had in the lot, ground or land upon which the said building or structure was placed, at the time of the filing of a notice of lis pendens in the said proceedings, or at the time of the entry of judgment therein to satisfy the same, which shall be in the same manner and with like effect as sales under judgment in foreclosure of mortgages. The notice of lis pendens provided for in this section shall consist of a copy of said notice of survey and shall be filed in the office of a county clerk in the county where the property affected by such action, suit or proceeding is located.

SEC. 638. FALLEN BUILDINGS; BUILDING IMMINENTLY DANGEROUS.

1. RECOVERY OF BODIES FROM WRECKED BUILDING.—In case of the falling of any building or part thereof in the city, where persons are known or believed to be buried under the ruins, the superintendent of buildings shall cause an examination of the premises to be made for the recovery of the bodies of the killed and injured. Whenever, in making such examination, it shall be necessary to remove any debris from the premises, the commissioners of the departments of docks, parks and street cleaning, and the superintendent of the appropriate bureau of highways, respectively, when called upon by the superintendent of buildings, shall co-operate with said superintendent in carrying out the purpose of this section and shall provide suitable and convenient places for the deposit of such debris.

2. TEMPORARY SAFEGUARDS FOR DANGEROUS BUILDINGS.—In case there shall be, in the opinion of the superintendent of buildings, actual and immediate danger of the falling of any building or part thereof so as to endanger life or property, he shall cause the necessary work to be done to render said building or part thereof temporarily safe until the proper proceedings provided for unsafe buildings by this article are instituted.

3. VACATING BUILDINGS; CLOSING STREETS AND SIDEWALKS.—The superintendent of buildings is hereby authorized and empowered in such cases, and also where any building or part thereof has fallen and life is endangered by the occupation thereof, to order and require the inmates and occupants of such building or part thereof to vacate the same forthwith, and the superintendent may, when necessary for the public safety, temporarily close sidewalks, streets, buildings, structures and places adjacent to such building or part thereof, and prohibit the same from being used. The police commissioner, when called upon by the superintendent of buildings to co-operate, shall enforce such orders or requirements.

4. LABORERS AND MATERIALS.—For the purposes of this section, the superintendent of buildings shall employ such laborers and materials as may be necessary to perform said work as speedily as possible.

SEC. 639. EMERGENCY FUND. 1. SOURCES.—The corporation counsel shall, on the first day of each and every month, render to each superintendent of buildings an account of and pay over to him the amount of such penalties and costs received by him, together with his bill for all necessary disbursements incurred or paid in said suits, keeping a separate account for each superintendent. Each superintendent shall pay over monthly the amount of such penalties and costs so collected to the comptroller, as a fund for the use and benefit of his bureau.

2. PURPOSES.—The fund aforesaid shall be used for the purpose of paying expenses incurred by the several superintendents of buildings under Sec. 638 of this chapter, and also for the purpose of carrying into effect any order or precept issued by any court, judge or justice to any superintendent of buildings. Upon the requisition of the superintendent having jurisdiction the comptroller shall pay such sums as may be allowed and adjusted by any court of record for such purposes.

ARTICLE 32

ENFORCEMENT OF CHAPTER

(In Effect November 29, 1915)

Section 650. Notice of requirements or of violations.

651. Emergency measures.

652. Judicial remedies.

653. Judicial orders.

654. Penalties.

655. When violation is a misdemeanor.

SEC. 650. NOTICE OF REQUIREMENTS OR OF VIOLATIONS. 1. ISSUE.—

All notices of the violation of any of the provisions of this chapter, and all notices required

or authorized by this chapter, directing anything to be done, including notices that any building, structure, premises, or any part thereof, is deemed to be unsafe or dangerous, shall be issued by the superintendent of buildings, and shall have his name affixed thereto.

2. **CONTENTS.**—Each such notice or order, in addition to the statement of requirements, shall contain a description of the building, premises or property affected.

3. **PERSONAL SERVICE.**—All such notices, and any notice or order issued by any court in any proceeding, instituted pursuant to this chapter, to restrain or remove any violation, or to enforce compliance with any provision or requirement of this chapter, may be served by delivering to and leaving a copy of the same with any person violating, or who may be liable under any provisions of this chapter, or who may be designated as provided in subdivision 4 of Sec. 653 of this article. They may be served by any officer or employee of the bureau of buildings, or by any person authorized by the said bureau.

4. **NOTICE BY POSTING.**—If the person to whom such order or notice is addressed cannot be found within The City of New York after diligent search shall have been made for him, then such notice or order may be served by posting the same in a conspicuous place upon the premises where such violation is alleged to have been placed or to exist, or to which such notice or order may refer or which may be deemed unsafe or dangerous, and also depositing a copy thereof in a post-office in The City of New York, inclosed in a sealed, postpaid wrapper addressed to said person at his last known place of residence, which shall be equivalent to a personal service of said notice or order upon all parties for whom such search shall have been made, whether residents or non-residents of the State of New York.

SEC. 651. EMERGENCY MEASURES. 1. STOPPING WORK; VACATING AND SECURING BUILDING.—In case there shall be, in the opinion of the superintendent of buildings, danger to life or property by reason of any defective or illegal work in violation of or not in compliance with any of the provisions or requirements of this chapter, the superintendent, or such person as may be designated by him, shall have the right and he is hereby authorized and empowered to order all further work to be stopped in and about said building, and to require all persons in and about said building forthwith to vacate the same, and to cause such work to be done in and about the building as in his judgment may be necessary to remove any danger therefrom.

2. **CLOSING STREET TEMPORARILY.**—The superintendent of buildings may, when necessary for the public safety, temporarily close the sidewalks, streets, buildings, structures or places adjacent to said building or part thereof, and the police commissioner, or any of his subordinates, when called upon by the said superintendent of buildings to co-operate, shall enforce all orders or requirements made under this section.

SEC. 652. JUDICIAL REMEDIES. 1. ACTION OR PROCEEDING, GENERALLY.—Whenever the superintendent of buildings is satisfied that any building or structure or any portion thereof, or any drainage or plumbing, the erection, construction or alteration, execution or repair of which is regulated, permitted or forbidden by this chapter, is being erected, constructed, altered or repaired, or has been erected, constructed, altered or repaired, in violation of, or not in compliance with, any of the provisions or requirements of this chapter, or in violation of any detailed statement of specifications or plans submitted and approved thereunder, or of any certificate or permit issued thereunder, or that any provision or requirement of this chapter, or any order or direction made thereunder has not been complied with, or that plans and specifications for plumbing and drainage have not been submitted or filed as required by this chapter, the superintendent may, in his discretion, through the corporation counsel, institute any appropriate action or proceeding at law or in equity to restrain, correct or remove such violation, or the execution of any work thereon, or to restrain or correct the erection or alteration of, or to require the removal of, or to prevent the occupation or use of, the building or structure erected, constructed, or altered, in violation of, or not in compliance with, any of the provisions of this chapter, or with respect to which the requirements thereof, or of any order or direction made pursuant to any provisions contained therein, shall not have been complied with. Any person who shall maintain or continue any building or structure, or any portion thereof, or any drainage or plumbing, in violation of any of the provisions of this chapter, after having been duly notified as in this chapter provided that such building or structure, or any portion thereof, or that such drainage or plumbing is in violation of any provision of this chapter, shall be subject to any action or proceeding and any penalty that is provided in this article for the commission of the violation.

2. **CORPORATION COUNSEL TO ACT.**—The corporation counsel shall institute any and all actions and proceedings, either legal or equitable, that may be appropriate or necessary for the enforcement of the provisions of this chapter.

3. **COURTS HAVING JURISDICTION.**—All courts of civil jurisdiction in the city shall have cognizance of and jurisdiction over any and all suits and proceedings authorized by this chapter to be brought for the recovery of any penalty or the enforcement of any provisions of this chapter, and shall give preference to such suits and proceedings over all others. No court shall lose jurisdiction of any action hereunder by reason of a plea that the title to

real estate is involved; provided the object of the action is to recover a penalty for the violation of any of the provisions of this chapter. All civil courts in said city are hereby invested with full legal and equitable jurisdiction to hear, try and determine all such actions and proceedings, and to make appropriate orders and render judgment therein according to law, so as to give force and effect to the provisions of this chapter.

4. **RESTRAINING ORDER.**—In any such action or proceeding the city may, in the discretion of the superintendent of buildings and on his affidavit setting forth the facts, apply to any court of record in said city or to a judge or justice thereof, for an order enjoining and restraining all persons from doing, or causing or permitting to be done, any work in or upon such building or structure, or in or upon such part thereof as may be designated in said affidavit, or from occupying or using said building or structure, or such portion thereof as may be designated in said affidavit, for any purpose whatever, until the hearing and determination of said action and the entry of final judgment therein. The court or judge or justice thereof, to whom such application is made, is hereby authorized forthwith to make any or all of the orders above specified as may be required in such application, with or without notice, and to make such other or further orders or directions as may be necessary to render the same effectual. No undertaking shall be required as a condition to the granting or issuing of such injunction order, or by reason thereof.

5. **JUDGMENT.**—All courts in which any action or proceeding is instituted under this chapter shall, upon the rendition of a verdict, report of a referee, or decision of a judge or justice, render judgment in accordance therewith.

6. **LIEN OF JUDGMENT.**—Any judgment rendered in an action or proceeding instituted under this chapter shall be and become a lien upon the premises named in the complaint in such action, to date from the time of filing a notice of lis pendens in the county clerk's office of the county, wherein the property affected by such action, suit or proceeding, is located. Every such lien may be enforced against said property, in every respect, notwithstanding the same may be transferred subsequent to the filing of the said notice.

7. **LIS PENDENS.**—The notice of lis pendens referred to in this section shall consist of a copy of the notice issued by the superintendent of buildings, requiring the removal of the violation and a notice of the suit or proceedings instituted, or to be instituted thereon. Such notice of lis pendens may be filed at any time after the service of the notice issued by the superintendent as aforesaid; provided he may deem the same to be necessary, or is satisfied that the owner of the property is about to transfer the same to avoid responsibility for having violated a provision of this chapter. Any notice of lis pendens filed pursuant to the provisions of this chapter may be vacated and cancelled of record upon an order of a justice of the court in which such suit or proceeding was instituted or is pending, or upon the consent in writing of the corporation counsel. The clerk of the county where the notice is filed is hereby directed and required to mark any such notice of lis pendens, and any record or docket thereof, as vacated and cancelled of record, upon the presentation and filing of a certified copy of an order or of the consent, as aforesaid.

8. **COSTS.**—In no case shall a bureau of buildings, or any officer thereof, of the city, be liable for costs in any action, suit or proceeding that may have been, or may hereafter be, instituted or commenced in pursuance of this chapter.

9. **OFFICERS NOT LIABLE FOR DAMAGES.**—No officer of a bureau of buildings, acting in good faith and without malice, shall be liable for damages by reason of anything done in any action or proceeding instituted under any provision of this chapter, or by reason of any act or omission in the performance of his official duties.

SEC. 653. JUDICIAL ORDERS. 1. TO COMPLY WITH BUILDING NOTICES.

—In case any notice or direction authorized to be issued by this chapter is not complied with within the time designated therein, the city, by the corporation counsel, may, at the request of the superintendent of buildings, apply to the Supreme Court, at a special term thereof, for an order directing the superintendent to proceed to make the alterations or remove the violation, as the same may be specified in said notice or direction.

2. **TO VACATE FOR VIOLATIONS.**—Whenever any notice or direction so authorized shall have been served as directed in this article, and the same shall not have been complied with within the time designated therein, the corporation counsel shall, at the request of the superintendent of buildings, in addition to, or in lieu of any other remedy provided for by this chapter, apply to the Supreme Court, at a special term thereof, for an order directing the superintendent to vacate such building or premises, or so much thereof as he may deem necessary, and prohibiting the same to be used or occupied for any purpose specified in said order until such notice shall have been complied with.

3. **RESPONSIBILITY OF LESSEES OR OCCUPANTS.**—In case any of the notices or orders of the court herein mentioned shall be served upon any lessee or party in possession of the building or premises therein described, it shall be the duty of the person upon whom such service is made to give immediate notice to the owner or agent of the building or premises named in the notice, if such person shall be within the limits of the city, and his residence be

known to such person, and, if not within the city, by depositing said notice in any post-office in the city, properly inclosed in a post-paid wrapper addressed to such owner or agent at his then known place of residence.

4. **DESIGNATION BY AN OWNER OF A BUILDING.**—Any owner of real estate or of a building thereon may execute and acknowledge a written designation of a resident of said city, as a person upon whom may be served, any notice of violation, notice to make safe, or notice of survey, a summons, a mandate, or any paper or process, issued under a provision of this chapter, and may file the same, with the written consent of the person so designated, duly acknowledged, in the office of the superintendent of buildings. The designator must specify the location of the property with respect to which the designation is made and the residences and places of business of the person making it and the person designated. It shall remain in force during the period specified therein, if any, or until revoked by the death or legal incompetency of either of the parties, or by the filing of a revocation by either of the parties, duly acknowledged and indorsed with the consent of the superintendent of buildings. The superintendent of buildings shall file and index each designation and shall note, upon the original designation and index, the filing of a revocation. While the designation remains in force, as prescribed in this section, a notice of violation, notice to make safe or notice of survey, a summons, a mandate, or any paper or process under the provisions of this chapter, or either of the same, shall be served upon the person so designated, in like manner and with like effect, as if it were served personally upon the person making the designation, notwithstanding his presence in the city.

5. **REIMBURSEMENT OF CITY FOR EXPENSES.**—The expenses and disbursements incurred in the carrying out of any order issued as provided in subdivision 2 of this section, shall become a lien upon the building or premises named in the order, from the time of filing of a copy of the said order, with a notice of the pendency of the action or proceeding as provided in this chapter, taken thereunder, in the office of the clerk of the county where the property affected by such action, suit or proceeding is located; and the Supreme Court, to whom application shall be made, is hereby authorized and directed to grant any of the orders above named, and to take such proceedings as shall be necessary to make the same effectual, and any justice to whom application shall be made is hereby authorized and directed to enforce such lien in accordance with the mechanics' lien laws applicable to the city.

SEC. 654. PENALTIES. 1. GENERAL.—Except as hereinafter provided with respect to the amount of the penalty the owner of any building, structure or part thereof, or wall, or any platform, staging or flooring to be used for standing or seating purposes, or the owner of the land where any violation of this chapter shall be placed, or shall exist, and any architect, builder, plumber, carpenter, mason or other person who may be employed or assist in the commission of any such violation, and any and all persons who shall violate any of the provisions of this chapter or fail to comply therewith, or any requirement thereof, or who shall violate or fail to comply with any detailed order or rules made thereunder, or who shall build in violation of any detailed statement of specifications or plans, submitted and approved thereunder, shall severally, for each and every such violation and non-compliance, respectively, forfeit and pay a penalty in the sum of not less than ten dollars nor more than fifty dollars.

2. **HEATING PLANT AND FIRE PREVENTION VIOLATIONS.**—Any person who shall violate any of the provisions of this chapter, as to the construction of chimneys, fireplaces, flues, hot-air pipes and furnaces, or who shall violate any of the provisions thereof relating to the framing or trimming of timbers, girders, beams or other woodwork in proximity to chimneys, flues or fireplaces, shall forfeit and pay a penalty in the sum of one hundred dollars.

3. **CONTINUING VIOLATION, AFTER NOTICE.**—Any person who having been served with a notice as in this chapter prescribed, to remove any violation, or comply with any requirement of this chapter, or with any order or rule made thereunder, shall fail to comply with said notice within ten days after such service or shall continue to violate any requirement of this chapter in the respect named in said notice shall pay a penalty of not less than fifty dollars nor more than two hundred and fifty dollars.

4. **JURISDICTION OF PENALTY ACTIONS.**—For the recovery of any said penalty or penalties an action may be brought in any municipal court, or court of record, in said city in the name of the city; and whenever any judgment shall be rendered therefor, the same shall be collected and enforced, as prescribed and directed by the code of civil procedure of the State of New York.

5. **DISCONTINUANCE OF ACTION UPON REMOVAL OF VIOLATION.**—If any violation shall be removed or be in process of removal within ten days after the service of a notice as in this chapter prescribed, the liability of such penalty shall cease, and the corporation counsel, on request of the superintendent of buildings, shall discontinue any action pending to recover the same, upon such removal or the completion thereof within a reasonable time.

6. REMISSION OF PENALTY.—The superintendent of buildings, through the corporation counsel, is hereby authorized in his discretion and upon good and sufficient cause being shown therefor, to remit any penalty which any person may have incurred, or may hereafter incur, under any of the provisions of this chapter; but no such penalty shall be remitted until the violation shall have been removed. Said superintendent is further authorized in his discretion to remit any costs allowed or obtained in any penalty suit or any other action or proceeding instituted under the provisions of this article.

SEC. 655. WHEN VIOLATION IS A MISDEMEANOR.—Any person who shall receive and fail to comply with any written peremptory order of the superintendent of buildings issued only when an immediate compliance with such order is essential to the public peace or safety, within the time specified in such order, shall be guilty of a misdemeanor.

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MEMORANDUM

RULES AND REGULATIONS FOR PLUMBING AND DRAINAGE, WATER SUPPLY, GAS PIPING AND VENTILATION OF BUILDINGS

Adopted by the superintendents of buildings of The City of New York, and published in accordance with the provisions of section 141 of the building code and section 409 of the Greater New York Charter as amended. Effective April 23, 1912.

Once in each year every employing or master plumber carrying on his trade, business or calling in the city of New York shall register his name and address at the office of the bureau of buildings in the borough in which his place of business is located, under such rules and regulations as said bureau shall prescribe, in accordance with section 141 (new section 604) of the building code of the city of New York.

A plumber proposing to do work in a borough other than that in which he is registered shall present his certificate at the office of the bureau of buildings in that borough before commencing work, so that the fact of his having been properly registered may be recorded.

FILING OF DRAWINGS, DESCRIPTIONS, ETC.

1. Drawings and triplicate descriptions, on forms furnished by the bureau of buildings for all plumbing and drainage, shall be properly filled in, and filed by the owner or architect in the said bureau. The plans must be drawn to scale in ink, on cloth, or they must be cloth prints of such scale drawings, and shall consist of such floor plans and sections as may be necessary to show clearly all plumbing work to be done, and must show partitions and methods of ventilating water-closet apartments.

2. The said plumbing and drainage shall not be commenced or proceeded with until said drawings and descriptions shall have been so filed and approved by the superintendent of buildings.

3. No modification of the approved drawings and descriptions will be permitted unless either amended drawings and triplicate descriptions, or an amendment to the original drawings and descriptions, covering the proposed change or changes, are so filed and approved by the superintendent of buildings.

4. The drainage and plumbing of all buildings, both public and private, shall be executed in accordance with the rules and regulations of the bureau of buildings.

5. Repairs or alterations of plumbing or drainage may be made without filing drawings and descriptions in the bureau of buildings, but such repairs or alterations shall not be construed to include cases where new vertical lines or horizontal branches of soil, waste, vent or leader pipes are proposed to be used.

6. Notice of such repairs or alterations shall be given to the said bureau before the same are commenced in such cases as shall be prescribed by the rules and regulations of the said bureau, and the work shall be done in accordance with the said rules and regulations.

7. Where repairs or alterations, ordered by the board of health or tenement house department for sanitary reasons, include cases where new vertical and horizontal lines of soil, waste, vent or leader pipes are proposed to be used or old ones replaced, drawings and descriptions must be filed with and approved by the superintendent of buildings before same shall be commenced or proceeded with.

8. Repairs and alterations may comply in all respects with the weight, quality, arrangement and venting of the rest of the work in the building. Except when an existing soil, waste or vent line has been damaged by fire or other causes to the extent of 50 per cent. or more of its entire length, same must be replaced by new lines installed in accordance with the rules and regulations governing new lines.

9. No plumbing and drainage or any part thereof shall be commenced until the plumber who is to do the work shall sign the specifications and make affidavit that he is duly authorized to proceed with the work. Affidavit must give the name and address of owner and plumber, etc. No registered plumber shall sign the specifications and act as the agent for a plumber who has not obtained a certificate of competency from the examining board of plumbers as an employing or master plumber. A violation of this rule will be deemed sufficient reason by the superintendent of buildings for the cancellation of a certificate of registration, in accordance with chapter 803, Laws of 1896. (Amended Laws of 1913, chapter 754.)

10. One set of specifications will be received for not more than ten houses, and then only when on adjoining lots and houses are exactly alike.

11. Written notices must be given to the superintendent of buildings by the plumber when any work is begun, and at such times as the work is ready for inspection.

DEFINITION OF TERMS

12. The term "private sewer" is applied to main sewers that are not constructed by and under the supervision of the department of public works.

13. The term "house sewer" is applied to that part of the main drain or sewer extending from a point two feet outside of the outer front wall of the building, vault or area to its connection with public sewer, private sewer or cesspool.

14. The term "house drain" is applied to that part of the main horizontal drain and its branches inside the walls of the building, vault or area and extending to and connecting with the house sewer.

15. The term "soil line" is applied to any vertical line of pipe having outlets above the floor of first story for water closet connections.

16. The term "waste line" is applied to any vertical line of pipe having outlets above the first floor for fixtures other than water closet.

17. The term "vent pipe" is applied to any special pipe provided to ventilate the system of piping and to prevent trap siphonage and back pressure.

MATERIALS AND WORKMANSHIP

18. All materials must be of the best quality, free from defects, and all work must be executed in a thoroughly workmanlike manner.

19. All cast-iron pipes and fittings must be uncoated, sound, cylindrical and smooth, free from cracks, sand holes and other defects, and of uniform thickness, and of the grade known in commerce as "extra heavy."

20. Pipe, including the hub, shall weigh not less than the following average weights per linear foot:

2 inches.....	5½ pounds
3 inches.....	9½ pounds
4 inches.....	13 pounds
5 inches.....	17 pounds
6 inches.....	20 pounds
7 inches.....	27 pounds
8 inches.....	33½ pounds
10 inches.....	45 pounds
12 inches.....	54 pounds

21. The size, weight and maker's name must be cast on each length of pipe.

22. All joints must be made with picked oakum and molten lead and be gas-tight. Twelve (12) ounces of fine, soft pig lead must be used at each joint for each inch in the diameter of the pipe.

23. All wrought iron and steel pipe must be equal in quality to "standard" and must be properly tested by the manufacturer. All pipe must be lap-welded. No plain black or uncoated pipe will be permitted.

24. All wrought iron or steel water supply, vent, waste and soil pipes must be galvanized.

25. Where galvanized wrought iron or steel pipe is required the fittings used on same must also be galvanized.

26. Fittings for waste or soil and refrigerator waste pipes must be the special extra heavy cast-iron recessed and threaded drainage fittings, with smooth interior waterway, and threads tapped, so as to give a uniform grade to branches of not less than one-fourth of an inch per foot.

27. Short nipples on wrought iron pipe or steel pipe, where the unthreaded part of the pipe is less than one and one-half inches long, must be of the thickness and weight known as "extra heavy" or "extra strong."

28. The pipe shall not be less than the following average thickness and weight per linear foot:

Diameters.	Thicknesses.	Weights Per Linear Foot.
1½ inches.....	.14 inch	2.68 pounds
2 inches.....	.15 inch	3.61 pounds
2½ inches.....	.20 inch	5.74 pounds
3 inches.....	.21 inch	7.54 pounds
3½ inches.....	.22 inch	9.00 pounds
4 inches.....	.23 inch	10.66 pounds
4½ inches.....	.24 inch	12.34 pounds
5 inches.....	.25 inch	14.50 pounds
6 inches.....	.28 inch	18.76 pounds
7 inches.....	.30 inch	23.27 pounds
8 inches.....	.32 inch	28.18 pounds
9 inches.....	.34 inch	33.70 pounds
10 inches.....	.36 inch	40.06 pounds
11 inches.....	.37 inch	45.02 pounds
12 inches.....	.37 inch	48.98 pounds

29. All brass pipes for soil, waste and vent pipes and solder nipples must be thoroughly annealed, drawn, brass tubing, of standard iron-pipe gauge.

30. Connections on brass pipe and between brass pipe and traps on iron pipe must not be made with slip joints or couplings. Threaded connections on brass pipe must be of the same size as iron pipe thread for same size of pipe and be tapered.

31. The following average thickness and weights per linear foot will be required:

Diameters.	Thicknesses.	Weights Per Linear Foot.
1½ inches.....	.14 inch	2.84 pounds
2 inches.....	.15 inch	3.82 pounds
2½ inches.....	.20 inch	6.08 pounds
3 inches.....	.21 inch	7.92 pounds
3½ inches.....	.22 inch	9.54 pounds
4 inches.....	.23 inch	11.29 pounds
4½ inches.....	.24 inch	13.08 pounds
5 inches.....	.25 inch	15.37 pounds
6 inches.....	.28 inch	19.88 pounds

32. Brass ferrules must be best quality, extra heavy, cast brass, not less than four inches long and two and one-quarter, three and one-half inches and four and one-half inches in diameter, and not less than the following weights:

Diameters.	Weights.
2¼ inches.....	1 pound 0 ounces
3½ inches.....	1 pound 12 ounces
4½ inches.....	2 pounds 8 ounces

33. One and one-half inch ferrules are not permitted.

34. Soldering nipples must be heavy cast brass or of brass pipe, iron pipe-size. When cast they must not be less than the following weights:

Diameters.	Weights.
1½ inches.....	0 pound 8 ounces
2 inches.....	0 pound 14 ounces
2½ inches.....	1 pound 6 ounces
3 inches.....	2 pounds 0 ounces
4 inches.....	3 pounds 8 ounces

35. Brass screw caps for cleanouts must be extra heavy, not less than one-eighth of an inch thick. The screw cap must have a solid square or hexagonal nut, not less than one inch high, with a least diameter of one and one-half inches. The body of the cleanout ferrule must be at least equal in weight and thickness to the caulking ferrule for the same size of pipe.

36. Where cleanouts are required by rules and by the approved plans, the screw cap must be of brass. The engaging part must have not less than six threads of iron-pipe size and be tapered. Cleanouts must be of full size of trap up to four inches in diameter, and not less than four inches for larger traps.

37. The use of lead pipes is restricted to the short branches of the soil and waste pipes, bends and traps, roof connections of inside leaders.

"Short branches" of lead pipe shall be construed to mean not more than:

- 8 feet of 1½ inch pipe.
- 5 feet of 2 inch pipe.
- 2 feet of 3 inch pipe.
- 2 feet of 4 inch pipe.

38. All connections between lead pipes and between lead and brass or copper pipes must be made by means of "wiped" solder joint.

39. All lead waste, soil, vent and flush pipes must be of the best quality, known in commerce as "D" and of not less than the following weights per linear foot:

Diameters.	Weights Per Linear Foot.
1¼ inches (for flush pipes only).....	2½ pounds
1½ inches.....	3 pounds
2 inches.....	4 pounds
3 inches.....	6 pounds
4 and 4½ inches.....	8 pounds

40. All lead traps and bends must be of the same weights and thicknesses as their corresponding pipe branches. Sheet lead for roof flashings must be six-pound lead, and must extend not less than six inches from the pipe, and the joint made watertight.

41. Copper tubing, when used for inside leader roof connections, must be seamless drawn tubing, not less than 22 gauge, and when used for roof flashings must be not less than 18 gauge.

GENERAL REGULATIONS

42. Each building must be separately and independently connected with a public or private sewer, or cesspool, except where a building is located on the rear of the same lot with another building, when its plumbing and drainage system may be connected to the house-drain of the front building behind the house trap and fresh air inlet which shall be used for both buildings if sewer-connected; or may be connected to an existing cesspool of front house and be provided with a separate house trap and fresh-air inlet.

43. Every building must have its sewer connections directly in front of the building, unless permission is otherwise granted by the superintendent of buildings.

44. Where there is no sewer in the street or avenue, and it is possible to construct a private sewer to connect in an adjacent street or avenue, a private sewer must be constructed. It must be laid outside the curb, under the roadway of the street.

45. Cesspools and privy vaults will be permitted only after it has been shown to the satisfaction of the superintendent of buildings that their use is absolutely necessary.

46. When allowed, they must be constructed strictly in accordance with the terms of the permit issued by the superintendent of buildings.

47. Cesspools must not be used as privy vaults nor can privy vaults be used as cesspools. Cesspools and privy vaults must be located at least 15 feet from any building and on the same lots as the building for which their use is intended. Walls of cesspools and privy vaults when constructed of brick must be 8 inches thick; if of stone, 18 inches thick. Bottoms of cesspools and privy vaults must be of stone concrete 6 inches thick. The entire interior surface of cesspools and privy vaults must be finished with a coating of Portland cement mortar 1 inch thick.

48. As soon as it is possible to connect with a public sewer, the owner must have the cesspool and privy vault emptied, cleaned and disinfected and filled with fresh earth, and have a sewer connection made in the manner herewith prescribed.

49. All pipe lines must be supported at the base on brick piers; or by heavy iron hangers from the cellar ceiling beams, and along the line by heavy iron hangers at intervals of not more than ten feet.

50. All pipes issuing from extensions or elsewhere, which would otherwise open within 20 feet of the window of any building, must be extended above the top of any window located within such distance. When a building exceeds in height that of an adjoining building, and windows or openings are cut in the wall on the lot line within 20 feet of the roof terminal of any soil, waste or vent line now in place or subsequently installed in the lower building, the owner of the higher building shall defray the expense of extending said soil, waste or vent lines above the roof of the higher building or shall himself make such alteration.

51. The arrangement of all pipes must be as straight and direct as possible. Offsets will be permitted only when unavoidable.

52. All pipes and traps should, where possible, be exposed to view. They should always be readily accessible for inspection and repairing.

53. In every building where there is a leader connected to the drain, if there are any plumbing fixtures, there must be at least one four (4) inch pipe extending above the roof for ventilation.

YARD, AREA AND OTHER DRAINS

54. All yards, areas and courts exceeding 15 square feet in area must be drained into the sewer. A shaft open at the top not exceeding 25 square feet in area, and which cannot be connected in back of a leader, yard, court or area drain trap, may be drained into a publicly placed, water-supplied, properly trapped and vented slop sink.

55. These drains, when sewer-connected, must have connections not less than three inches in diameter. They should be controlled by one trap—the leader trap, if possible.

56. Floor drains will only be permitted when it can be shown to the satisfaction of the superintendent of buildings that their use is absolutely necessary and arrangement made to maintain a permanent water seal in the traps.

57. Cellar drains may be connected in back of and controlled by a leader, yard, court or area drain trap which need not be vented.

58. Subsoil drains should discharge into a sump or receiving tank, the contents of which if discharged by gravity may be discharged into a rain leader, yard, court or area drain behind the trap controlling the same or may be discharged through a properly trapped and vented water supplied receptacle. Where mechanical force is required to discharge the contents into the plumbing and drainage system, a proper automatic cut-off or check valve must be provided on the connection between house-drain and apparatus used for raising the contents of sump-pit.

59. The contents of settling chamber or dust receptacles for vacuum cleaners may be discharged into a plumbing and drainage system, the same as sub-soil drain sump-pits.

LEADERS

60. Every building shall be kept provided with proper metallic gutters and rain leaders for conducting water from all roofs in such manner as shall protect the walls and foundations from injury. In no case shall the water from any rain leader be allowed to flow upon the sidewalk or adjoining property, but the same shall be conducted by proper pipes to the sewer. If there be no sewer in the street upon which the building fronts, then the water from said leaders may be conducted by proper pipes laid below the surface of sidewalk to the street gutter, or may be conducted by extra heavy cast-iron pipe to a leeching cesspool located at least 20 feet from any building. No plumbing fixtures shall discharge into a leeching cesspool.

61. Inside leaders must be made of cast iron, wrought iron or steel, with roof connections made gas and water tight by means of a heavy lead or copper-drawn tubing wired to a brass ferrule or nipple caulked or screwed into the pipe.

62. Outside leaders may be made of sheet metal, but they must connect with the house drain by means of a cast-iron pipe extending vertically five feet above the grade level.

63. Leaders must be trapped with cast-iron running traps so placed as to prevent freezing.

64. Rain-water leaders must not be used as soil, waste or vent pipes nor shall any such pipe be used as a leader.

THE HOUSE SEWER, HOUSE DRAIN, HOUSE TRAP AND FRESH AIR INLET

65. Old house sewers can be used in connection with the new buildings or new plumbing only when they are found, on examination by the plumbing inspector, to conform in all respects to the requirements governing new sewers.

66. When a proper foundation consisting of a natural bed of earth, rock, etc., can be obtained the house sewer can be of earthenware pipe.

67. Where the ground is made or filled in, or where the pipes are less than three feet deep, or in any case where there is danger of settlement by frost or from any cause and when cesspools are used, the house sewer must be of extra heavy cast-iron pipe, with lead-caulked joints.

68. No earthenware house-drain, when found in a leaky or defective condition, shall be repaired or replaced except with heavy cast-iron pipe.

69. The house drain and its branches must be of extra heavy cast-iron when underground, and of extra heavy cast-iron or galvanized wrought iron or steel when above ground.

70. The house drain must properly connect with the house sewer at a point two feet outside of the outer front vault or area wall of the building. An arched or other proper opening must be provided for the drain in the wall to prevent damage by settlement.

71. The house drain if above the cellar floor must be supported at intervals of ten feet by eight-inch brick piers or suspended from the floor beams, or be otherwise properly supported by proper hangers placed not more than 10 feet apart.

72. No steam-exhaust, boiler blow-off or drip-pipe shall be connected with the house-drain. Such pipes must first discharge into a proper condensing tank, and from this a proper outlet to the house sewer outside of the building must be provided. In low pressure steam systems the condensing tank may be omitted, but the waste connections must be otherwise as above required.

73. The house-drain and house-sewer must be run as direct as possible, with a fall of at least one-quarter inch per foot, all changes in direction made with proper fittings, and all connections made with Y branches and one-eighth and one-sixteenth bends.

74. The house-sewer and house-drain must be at least 4 inches in diameter when receiving the discharge of a water-closet. Where rain leaders are connected to the plumbing system, the sizes of house-sewer, house-drain and leader connections shall be computed according to the square feet of area drained into them. No house-sewer or house-drain shall be of less diameter than the largest line of pipes connected thereon. The following table is the maximum area allowed to drain into pipes of given diameter:

Diameter of Pipe.	Fall	Fall
	$\frac{1}{4}$ Inch Per Foot.	$\frac{1}{2}$ Inch Per Foot.
3.....	1,200 square feet	1,500 square feet
4.....	2,500 square feet	3,200 square feet
5.....	4,500 square feet	6,000 square feet
6.....	8,000 square feet	10,000 square feet ✓
7.....	12,400 square feet	15,600 square feet
8.....	18,000 square feet	22,500 square feet
9.....	25,000 square feet	31,500 square feet
10.....	41,000 square feet	59,000 square feet
12.....	69,000 square feet	98,000 square feet

75. Full size Y and T branch fittings for handhole cleanout must be provided where required on house-drain and its branches. No clean-out need be larger than 6 inches in diameter.

76. An iron running trap must be placed in the house-drain near the front wall of the house, and on the sewer side of all connections, except a Y fitting used to receive the discharge from an automatic sewage lift, oil separator, or a drip-pipe where one is used. If placed outside of the house or below the cellar floor, it must be made accessible in a brick manhole, the walls of which must be eight inches thick, with an iron or flagstone cover. When outside the house it must never be less than three feet below the surface of the ground.

77. When the plumbing system of any building is altered by the addition of a new soil, waste or vent line, and no house trap and fresh air inlet or leader trap exists on the house-drain, same shall be provided.

78. The house trap must have two cleanouts, with brass screw cap ferrules caulked in.

79. A fresh air inlet pipe must be connected with the house-drain just inside of the house trap and extended to the outer air, terminating with a return bend, with open end one foot above the grade at most available point to be determined by the superintendent of buildings and shown on plans. The fresh air inlet pipe must be of the same diameter as the house-drain, an automatic device approved by the Superintendent of Buildings may be used when set in a manner satisfactory to him.

80. No curb box or similar device with grating placed in sidewalk will be permitted for fresh air inlets.

SOIL AND WASTE LINES

81. All main, soil, waste or vent pipes must be of iron, steel or brass.

82. When they receive the discharge of fixtures on any floor above the first, they must be extended in full calibre at least one foot above the roof coping, and well away from all shafts, windows, chimneys or other ventilating openings. When less than four inches in diameter, they must be enlarged to four inches at a point not less than one foot below the roof surface by an increaser not less than nine (9) inches long.

83. No caps, cowl or bends shall be affixed to the top of such stack.

84. In all buildings, wire baskets must be securely fastened into the opening of each pipe in an accessible position. When roofs are used for drying purposes or roof gardens, all pipes shall be extended to a height of seven feet.

85. Necessary offsets above the highest fixture branch must not be made at an angle of less than forty-five degrees to the horizontal.

86. Soil and waste pipes must have proper Y or TY branches for all fixture connections.

87. No connections to lead branches for water-closets or slop sinks will be permitted except the required branch vent.

88. Branch soil and waste pipe must have a fall of at least one-quarter inch per foot.

89. Short TY branches will be permitted on vertical lines only. Long one-quarter bends and long TYs are permitted. Short one-quarter bends and double hubs, short root increasers and common offsets, and bands and saddles, are prohibited.

90. The diameters of soil and waste pipes must not be less than those given in the following table:

Main soil stacks.....	4	inches
Main soil stacks for water-closets on 5 or more floors.....	5	inches
Branch soil pipes.....	4	inches
Main waste stacks.....	2	inches
Main waste stacks for kitchen sinks on 5 or more floors.....	3	inches
Branch wastes for slop sinks.....	3	inches
Branch waste-pipes for laundry tubs.....	1 ½	inches
When set in ranges of three.....	2	inches
Branch waste for kitchen sinks.....	2	inches
Branch waste for urinals.....	2	inches
Branch waste for other fixtures.....	1 ½	inches

VENT PIPES

91. All traps must be protected from siphonage and back-pressure and the drainage system ventilated by special lines of vent pipes.

92. All vent pipe lines and main branches must be of iron, steel or brass. They must be increased in diameter and extended above the roof as required for waste-pipes. They may be connected with the adjoining soil or waste line well above the highest fixture, but this will not be permitted when there are fixtures on more than six floors.

93. All offsets must be made at an angle of not less than forty-five degrees to the horizontal, and all lines must be connected at the bottom with a soil or waste pipe or the drain in such a manner as to prevent the accumulation of rust scale.

94. Branch vent pipes shall be kept above the top of all connecting fixtures, so as to prevent the use of vent pipes as soil pipes or waste-pipes. Branch vent pipes should be connected not less than six inches nor more than two feet from crown of trap or side of lead bend.

95. Vent connections for water-closets and slop sinks must be made from the branch soil or waste-pipe just below the trap of the fixture, and this branch vent pipe must be so connected as to prevent obstruction and no waste-pipe connected between it and the fixtures. Earthenware traps must have no vent horns.

96. No sheet metal, brick or other flue shall be used as a vent pipe.

97. The size of vent pipes throughout must not be less than the following: For main vent, two inches in diameter; 2-inch main vent will be allowed for water-closets on three floors, provided said vent line does not exceed 35 feet in length and Section 98 is complied with for water-closets on four or more floors, 3 inches in diameter; for other fixtures on less than seven floors, 2 inches in diameter; 3-inch vent pipes will be permitted for less than nine stories; for more than eight or less than sixteen stories; 4 inches in diameter; for more than fifteen and less than twenty-two stories, 5 inches in diameter; for more than twenty-one stories the size of vent pipes shall be determined by the Superintendent of Buildings.

For fixtures other than water-closets and slop sinks and for more than eight stories, vent pipes may be one inch smaller in diameter than above stated.

For long horizontal branch vent pipes over ten feet in length but not exceeding 25 feet, 2 inches in diameter: when over 25 feet in length but not exceeding 50 feet, 3 inches in diameter. No horizontal branch vent pipe can exceed 50 feet in length, nor can any main vent be of less diameter than the longest branch vent connecting the same.

98. When plumbing fixtures installed in any building are arranged in groups or batteries and the number of branch vents from the traps of fixtures connecting to any main

branch vent exceeds the number and size given in the following table, a 3-inch main branch vent must be provided for the additional vent connections:

2—1 1/2	inch branches on a 1 1/2 inch main branch.
4—2	inch branches on a 2 inch main branch.
7—1 1/2	inch branches on a 2 inch main branch.
2—2	} inch branches on a 2 inch main branch.
4—1/2	
1—2	
5—1 1/2	inch branches on a 2 inch main branch.

TRAPS

99. No form of trap will be permitted to be used unless it has been approved by the superintendent of buildings.

100. No mason's cesspool, bell, pot, bottle or D-trap will be permitted, nor any form of trap that is not self-cleaning, nor that has interior chamber or mechanism, nor any trap except earthenware ones that depend upon interior partitions for a seal. Backwater or tide valves will only be permitted when it can be shown to the satisfaction of the superintendent of buildings that their use is absolutely necessary and of a type as approved by him.

101. Every fixture must be separately trapped by a water-sealing trap placed as close to the fixture outlet as possible, and no trap shall be placed more than 2 feet 0 inches from any fixture.

102. A set of not more than three wash trays may connect with a single trap, or into the trap of an adjoining sink, provided both sink and tub waste outlets are on the same side of the waste line, and the sink is nearest the line. When so connected the waste-pipe from the wash trays must be branched in below the water-seal.

103. The discharge from any fixture must not pass through more than one trap before reaching the house-drain.

104. All traps must be well supported and set true with respect to their water levels.

105. All fixtures, other than water-closets and urinals, must have strong metallic strainers or bars over the outlets to prevent obstruction of the waste-pipe.

106. All exposed or accessible traps, except water-closet traps, must have brass trap screws for cleaning the trap placed on the inlet side, or below the water level.

107. All iron traps for house-drain, yard and other drains and leaders must be running traps with handhole cleanouts of full size of the traps, when same are less than five (5) inches. All traps under ground must be made accessible by brick manholes with proper covers.

108. Overflow pipes from fixtures must in all cases be connected on the inlet side of traps.

109. All earthenware traps must have approved heavy brass floor plates properly secured to the branch soil pipe and bolted to the trap flange, and the joint made gas-tight. The use of rubber washers for floor connections is prohibited. All floor flanges must be set in place and inspected before any water-closet is set thereon.

110. No trap shall be placed at the foot of main-soil and waste-pipe lines.

111. Plunge baths should be provided with a trap at least four inches in diameter, the waste from trap to bath to be reduced two diameters and this waste to be controlled by a gate valve. Overflow pipes, if provided, must be connected on inlet side of trap. Traps must be ventilated by a separate vent line extended above roof. Vent lines shall be the same size as trap and waste connection.

112. The sizes for traps must not be less than those given in the following table:

Traps for water-closets.....	4	inches in diameter
Traps for slop sinks.....	3	inches in diameter
Traps for kitchen sinks.....	2	inches in diameter
Traps for wash trays.....	2	inches in diameter
Traps for urinals.....	2	inches in diameter
Traps for shower-baths.....	2	inches in diameter
Traps for other fixtures.....	1 1/2	inches in diameter
Traps for leaders, area, floor and other drains must be at least 3 inches in diameter.		

113. Dental cuspidors must be separately trapped by a trap of at least 1 1/2 inches in diameter properly vented and placed as close to the fixtures as possible. The connection between trap and cuspidor may be 3/4 inch in diameter.

114. No plumbing fixtures, except bar sinks, soda fountains or drinking fountains, shall be installed with an indirect waste connection to the plumbing and drainage system. The waste of every bar-sink, soda-fountain, and drinking-fountain, if not directly connected, must discharge over a properly water-supplied, trapped and vented sink. The main waste lines shall be 2 inches in diameter, and the branches to fixtures at least $1\frac{1}{2}$ inches in diameter. Drinking fountains must be trapped and the waste line extended through the roof. No vent connections need be provided.

SAFE AND REFRIGERATOR¹ WASTE PIPES

115. Safe and refrigerator waste-pipes must be of galvanized iron, and be not less than $1\frac{1}{4}$ inches in diameter nor larger than $1\frac{1}{2}$ inches in diameter, with pipe branches at least 1 inch in diameter with strainers over each inlet.

116. Safe and refrigerator waste-pipes shall not be trapped. They must discharge over a properly water-supplied, trapped and vented sink, publicly placed, not more than 4 feet above the floor. In no case shall any refrigerator or safe waste-pipe discharge over a sink located in a room used for living purposes.

117. The branches on vertical lines must be made by Y or TY fittings and carried up to the safe with as much pitch as possible.

118. Lead safes must be graded and neatly turned over bevel strips at their edges.

119. Where there is an offset on a refrigerator waste-pipe in the cellar there must be cleanouts to control the horizontal part of the pipe.

120. In all lodgings and tenement houses the safe and refrigerator waste-pipes must extend above the roof.

WATER-CLOSETS, SINKS AND WASHTUBS

121. In all buildings, occupied as stores, dwellings, lodgings or boarding houses, hotels, offices, lofts, work-shops, factories or storage houses, there must be at least one water-closet in each building. There must be sufficient water-closets so that there will never be more than 15 persons to each water-closet. In places of public assembly, the number of toilets and the most available location are to be determined by the superintendent of buildings.

122. Separate water-closets and toilet rooms must be provided for each sex in buildings used as workshops, lofts, office buildings, factories, hotels and all places of public assembly.

123. In lodging houses there must be one water-closet on each floor, and where there are more than 15 persons on any floor there must be an additional water-closet on that floor for every 15 additional persons or fraction thereof.

124. In tenement houses, lodging houses, factories, workshops and all public buildings, the entire water-closet apartment and side walls to a height of six inches, from the floor except at the door, must be made water-proof with asphalt, cement, tile, metal or other water-proof material as approved by the superintendent of buildings.

125. In all buildings, the water-closet and urinal apartments must be ventilated to the outer air by windows opening on the same lot as the building is situated on or by a ventilating skylight placed over each room or apartment wherein such fixtures are located.

126. In all buildings the outside partition of any water-closet or urinal apartment must be air-tight and extend to the ceiling or be independently ceiled over. When necessary to properly light such apartments, the upper part of the partition must be provided with translucent glass. The interior partitions of such apartments must be dwarfed partitions.

127. The general water-closet accommodation of any building cannot be placed in the cellar, nor can any water-closet be placed outside of a building except to replace an existing water-closet.

128. In alteration work where it is not practicable to ventilate a water-closet or urinal apartment by windows or a skylight directly to the outer air, there may be provided a galvanized wrought iron vent duct extended to the outer air which must be equal in area to at least 144 square inches for one water-closet or urinal, and an additional 72 square inches for each water-closet added therein.

129. Where water-closets will not support a rim-seat, the seat must be supported on galvanized iron legs.

130. Every earthenware water-closet with connection through the floor in all new work, and in all alterations, must be set on an approved floor slab of porcelain, slate or other material impervious to moisture, same to be not less in size than the base of the water-closet set thereon.

131. All water-closets must have earthenware flushing rim bowls. They must be set entirely free and open from all enclosing woodwork.

132. Pan, plunger, offset-washout and washout, or other water-closets having an un-ventilated space, or whose walls are not thoroughly washed out at each discharge, will not be permitted.

133. Long hopper water-closets will not be permitted, except earthenware hoppers, where there is an exposure to frost.

134. Drip trays on water-closets will not be permitted.

135. Water-closets and urinals must never be connected directly with or flushed from the water-supply pipes, except when flushometer valves are used.

136. Each water-closet and urinal must be flushed from a separate cistern, the water from which is used for no other purpose, or may be flushed through flushometer valves.

137. Where "Flushometers" are used, they must be supplied from tank pressure, unless otherwise permitted by the superintendent of buildings; the rising lines shall be at least one and one-half inches in diameter, and the branches shall be at least one and one-quarter inches in diameter for water-closets and three-quarters inch in diameter for urinals.

138. The overflow of cisterns may discharge into the bowls of the closet, but in no case connect with any part of the drainage system.

139. Iron water-closet and urinal cisterns and automatic water-closet and urinal cisterns are prohibited, unless approved by the superintendent of buildings.

140. The copper lining of water-closet and urinal cisterns must not be lighter than ten (10) ounce copper.

141. Water-closet flush pipes must be not less than one and one-fourth inches and urinal flush pipes one (1) inch in diameter, and if of lead must not weigh less than two and one-half pounds and two pounds per linear foot. Flush couplings must be of full size of the pipe.

142. Rubber connections and elbows are not permitted on flush pipes.

143. Latrines, trough water-closets and similar appliances may be used only on written permit from said superintendent of buildings, and must be set and arranged as may be required by the terms of the permit.

144. All urinals must be constructed of materials impervious to moisture, and that will not corrode under the action of urine. The floor and wall of the urinal apartments must be lined with similar non-absorbent and non-corrosive material.

145. The platforms of treads of urinal stalls must never be connected independently to the plumbing system, nor can they be connected to any safe waste-pipe.

146. Iron trough water-closets and trough urinals must be enameled or galvanized.

147. In all houses, sinks must be entirely open, on iron legs or brackets without any enclosing woodwork.

148. Wooden washtubs are prohibited, except when used in hotels, restaurants or bottling establishments for washing dishes or bottles. Cement or artificial stone tubs will not be permitted unless approved by the superintendent of buildings.

WATER SUPPLY FOR FIXTURES

149. All water-closets and other plumbing fixtures must be provided with a sufficient supply of water for flushing to keep them in a proper and cleanly condition.

Flush tanks must have a capacity of eight gallons for water-closets and five gallons for urinals.

150. House service pipes must be connected to the street mains by means of taps, and a stopcock or valve under the sidewalk at the curb, in compliance with the rules and under the supervision of the department of water supply, gas and electricity.

151. A separate stop or valve must be placed upon the service pipe inside the front wall.

152. The diameters of street service pipe must not be less than three-quarters inch for dwellings and tenements occupied by six families or less; one inch for tenements or apartment houses occupied by more than six families and one and one-half inch for hotels, factories and other miscellaneous buildings, provided that in no case can the diameter of the service pipes be less than the diameter of the tap installed under the supervision of the department of water supply, gas and electricity.

153. Riser Lines.—The diameter of all riser lines in plumbing systems shall be not less than three-quarters ($\frac{3}{4}$) inches; except that when lead or brass pipe is used, the minimum diameter may be one-half ($\frac{1}{2}$) inch.

Separate stop-cocks or valves, so located as to be accessible at all times, shall be placed at the foot of each riser line and, in all buildings other than residence buildings occupied exclusively by one or two families or having not more than fifteen sleeping rooms, on each branch line from the riser for each isolated fixture or each group of fixtures such as bathroom fixtures, kitchen fixtures, etc.; except that only one stop-cock or valve shall be required for the fixtures contained in any one apartment, suite, store or loft occupied by one tenant when all the fixtures contained in each such apartment, suite, store or loft are supplied from one branch line.

154. Diameters of branches to any fixture must not be less than one-half inch, except when used to supply water-closets, cisterns or lavatories. When the material used is lead or brass pipe, the minimum diameter may be three-eighths inch. Branches for flush valves for water-closets must not be less than one and one-quarter inch in diameter and for urinals not less than three-quarters of an inch in diameter.

155. Where a hot-water-supply system is installed, the distance between the hot and cold risers should not be less than six inches. Where it is impossible to place them six inches or more apart, the hot-water riser must be covered with an approved insulating material and a method of circulation provided that will insure a prompt delivery of hot water at the faucet when required.

156. All risers and branches must be properly fastened.

157. When the water pressure is not sufficient to supply freely and continuously all fixtures, a house-supply tank must be provided of sufficient size to afford an ample supply of water to all fixtures at all times. Such tanks must be supplied from the pressure or by power pumps, as may be necessary; when from the pressure, ball cocks must be provided.

158. House-supply tanks must be metal-covered so as to exclude dust and so located as to prevent water contamination by gas and odors from plumbing fixtures.

159. House-supply tanks must be of wood or iron, or of wood lined with tinned and polished copper.

160. House tanks must be supported on iron beams.

161. The overflow pipe should discharge upon the roof, where possible, and in such cases be brought down to within six (6) inches of the roof, or it must be trapped and discharged over an open and water-supplied sink not in the same room, not over three and one-half feet above the floor. In no case shall the overflow be connected with any part of the plumbing system.

162. Emptying pipes for such tanks must be provided, and be discharged in the manner required for overflow pipes, and may be branched into overflow pipes. Emptying pipes for tanks containing more than five hundred (500) gallons must be four (4) inches in diameter and provided with a valve of same size fitted with a wheel or lever handle.

163. Acid wastes must be "B" lead pipe or earthen pipe; if of lead pipe they must be at least two inches in diameter, and if of earthen pipe at least three inches in diameter. They must be extended through roof for ventilation and continued down to the lowest story of building and so arranged as to discharge into a lime box and diluting sink properly trapped and vented and connected inside of house trap. If the lime box and diluting sink is not used the acid waste must be extended to an earthen house sewer or separately and independently connected to a public or private sewer in street and provided with an accessible running trap located just inside of front wall of building. All branches and joints on lead pipe acid wastes must be made by means of burnt lead joints. If earthenware pipe is used, vertical joints must be made with a mixture of asphaltum and cement. Each length of pipe on vertical runs and on horizontal runs when above the cellar floor must be supported at each hub by proper supports. All floor drains and fixture connections must be trapped and run as direct as possible.

SEWAGE LIFTS

164. When it is necessary to use a sump system and sewage lift to receive the discharge from the waste or soil connection of fixtures, same shall be arranged to be accessible. If discharged with compressed air it shall be connected to the house drain on the sewer side of all leader or area drain traps and fixture connections or may be connected to house drain on the sewer side of house trap. A separate trap and fresh-air inlet must be provided on the inlet side of sump and a 4-inch pipe line continued from drain discharging into sump up to and above roof, for purposes of ventilation. Relief pipes must be provided on sewage receptacles of sumps. Traps of fixtures connected to sump systems must not be vented to vent lines which are used to ventilate traps of fixtures on gravity system. Sump systems should be entirely separate both as to discharge and venting from rest of plumbing system in buildings.

OIL SEPARATORS

165. Oil separators installed in any building where volatile fluids are used, must be arranged to be readily accessible. They must not receive the discharge of any water-closet, rain leader, yard, court or area drain.

166. They must, if discharged by gravity, be connected by a Y branch fitting to the house drain behind the house trap in such a manner that they will not interfere with the house drain and the rest of the plumbing and drainage system. When mechanical force is used to discharge the contents, the connection must be made by a Y branch fitting on the sewer side of house trap.

167. No separate running trap need be provided on the drain entering oil separators, but a separate fresh-air inlet and vent line must be provided to keep the system of drainage controlled by the oil separator entirely separate from the rest of plumbing and drainage system.

168. The size of fresh-air inlet shall be determined by the size of inlet connection to oil separator, which shall be considered the same as the term house-drain for determining the size of all fresh-air inlets, which shall conform to the same requirements as regards size and arrangement of terminals for fresh-air inlets as called for in regulations.

169. Vent lines shall conform in all respects to vent lines for plumbing fixtures as regards size and arrangement.

170. Relief pipes must be provided at least 1½ inches in diameter. They may be connected to a vent line when installed as a separate system or must be carried independently above the roof.

TESTING THE PLUMBING SYSTEM

171. The entire plumbing and drainage system within the building must be tested by the plumber, in the presence of a plumbing inspector, under a water test. All pipes must remain uncovered in every part until they have successfully passed the test. The plumber must securely close all openings, as directed by the inspector of plumbing. The use of wooden plugs for this purpose is prohibited.

172. The water test will be applied by closing the lower end of the main house-drain and filling the pipes to the highest opening above the roof with water. The water test shall include at one time the house-drain and branches, all vertical and horizontal soil, waste and vent and leader lines and all branches therefrom to a point above the surface of the finished floor and beyond the finished face of walls and partitions. If the drain or any part of the system is to be tested separately, there must be a head of water at least six (6) feet above all parts of the work so tested, and special provision must be made for including all joints and connections in at least one test.

173. After the completion of the plumbing work in any new or altered building and before the building is occupied, a final smoke test must be applied in the presence of a plumbing inspector. Except that for a building not over 6 stories in height, a peppermint test may be applied.

174. The material and labor for the tests must be furnished by the plumber. Where the peppermint test is used, two ounces of oil of peppermint must be provided for each line up to five stories and cellar in height and an additional ounce of oil of peppermint must be provided for each line when lines are more than five stories in height.

PLUMBING IN TENEMENT HOUSES

175. All sections or parts of sections of the tenement house law relating to plumbing and drainage of tenement houses are to be observed, and are hereby made a part of these rules and regulations.

GAS PIPING AND FIXTURES

176. Hereafter the gas piping and fixtures in all new buildings and all alterations and extensions made to the gas piping in old buildings must be done in accordance with the following rules, which are made in accordance with the provisions of the building code.

177. Before the construction or alteration of any gas piping in any building or part of any building, a permit must be obtained from the superintendent of buildings. This permit will be issued only to a registered plumber. Small alterations may be made by notifying the bureau of buildings, using the same blank forms provided for alterations and repairs to plumbing.

178. All gas pipe shall be of the best quality wrought iron or steel and of the kind classed as standard pipe, and shall weigh according to the following scale:

Diameters.	Weights per Linear Foot.
$\frac{3}{8}$ inch.....	0.56 pound
$\frac{1}{2}$ inch.....	0.85 pound
$\frac{3}{4}$ inch.....	1.12 pounds
1 inch.....	1.67 pounds
$1\frac{1}{4}$ inch.....	2.24 pounds
$1\frac{1}{2}$ inch.....	2.68 pounds
2 inch.....	3.61 pounds
$2\frac{1}{2}$ inch.....	5.75 pounds
3 inch.....	7.54 pounds
$3\frac{1}{2}$ inch.....	9.00 pounds
4 inch.....	10.66 pounds

No pipe allowed of less than $\frac{3}{8}$ inch in diameter.

179. All fittings (except stop-cocks or valves) shall be of malleable iron.

180. There shall be a heavy brass straightaway cock or valve on the service pipe immediately inside the front foundation wall. Iron cocks or valves are not permitted.

181. Where it is not impracticable so to do, all risers shall be left not more than five feet from front wall.

182. No pipe shall be laid so as to support any weight (except fixtures) or be subjected to any strain whatsoever. All pipe shall be properly laid and fastened to prevent becoming trapped, and shall be laid, when practicable, above timbers or beams instead of beneath them. Where running lines or branches cross beams, they must do so within thirty-six inches of the end of the beams, and in no case shall the said pipes be let into the beams more than two inches in depth. Any pipe laid in a cold or damp place shall be properly dripped, protected and painted with two coats of red lead and boiled oil or tarred.

183. No gas pipe shall be laid in cement or concrete unless the pipe or channel in which it is placed is well covered with tar.

184. All drops must be set plumb and securely fastened, each one having at least one solid strap. Drops and outlets less than $\frac{3}{4}$ of an inch in diameter shall not be left more than one inch below plastering, centre-pieces or woodwork.

185. All outlets and risers shall be left capped until covered by fixtures.

186. No unions or running threads shall be permitted. Where necessary to cut out to repair leaks or make extensions, pipe shall be again put together with right and left couplings.

187. No gasfitters' cement shall be used, except in putting fixtures together.

188. All gas brackets and fixtures shall be placed so that the burners of same are not less than three feet below any ceiling or woodwork, unless the same is properly protected by a shield, in which case the distance shall not be less than eighteen inches.

No swinging or folding gas brackets shall be placed against any stud partition or woodwork.

No gas brackets on any lath and plaster partition or woodwork shall be less than five inches in length, measured from the burner to the plaster surface or woodwork.

Gas lights placed near window curtains or any other combustible material shall be protected by a proper shield.

189. Gas outlets for burners shall not be placed under tanks, backs of doors or within four feet of any meter.

190. All buildings shall be piped according to the following scale:

Diameter.	Length.	Burners.
$\frac{3}{8}$ inch.....	26 feet	3
$\frac{1}{2}$ inch.....	36 feet	6
$\frac{3}{4}$ inch.....	60 feet	20
1 inch.....	80 feet	35
$1\frac{1}{4}$ inch.....	110 feet	60
$1\frac{1}{2}$ inch.....	150 feet	100
2 inch.....	200 feet	200
$2\frac{1}{2}$ inch.....	300 feet	300
3 inch.....	450 feet	450
$3\frac{1}{2}$ inch.....	500 feet	600
4 inch.....	600 feet	750

191. Outlets for gas ranges shall have a diameter not less than required for six burners, and all gas ranges and heaters shall have a straightaway cock on service pipe.

192. When brass piping is used on the outside of plastering or woodwork it shall be classed as fixtures.

193. All brass tubing used for arms and stems of fixtures shall be at least No. 18 standard gauge and full size outside so as to cut a full thread.

All threads on brass pipe shall screw in at least 5-16 of an inch. All rope or square tubing shall be brazed or soldered into fittings and distributors, or have a nipple brazed into the tubing.

194. All cast fittings, such as cocks, swing joints, double centres, nozzles, etc., shall be extra heavy brass. The plugs of all cocks must be ground to a smooth and true surface for their entire length, be free from sandholes, have not less than $\frac{3}{4}$ of an inch bearing (except in cases of special design), have two flat sides on the end for the washer, and have two nuts instead of a tail screw. All stop pins to keys or cocks shall be screwed into place.

195. After all piping is fitted and fastened and all outlets capped up, there must be applied by the plumber, in the presence of an inspector of the bureau of buildings, a test with air to a pressure equal to a column of mercury 6 inches in height, and the same to stand for five minutes; only mercury gauge shall be used. No piping shall be covered up, nor shall any fixtures, gas heater or range be connected thereto until a card showing the approval of this test has been issued by the superintendent of buildings.

196. No meter will be set by any gas company until a certificate is filed with them from the bureau of buildings certifying that the gas pipes and fixtures comply with the foregoing rules.

MODIFICATIONS

197. When for any reason it may be impracticable to comply strictly with the foregoing rules, the superintendent of buildings shall have power to modify their provisions so that the spirit and substance thereof shall be complied with. Such modifications shall be indorsed upon the permit over the signature of the superintendent of buildings.



BUILDING ZONE RESOLUTION

Applying to

THE CITY OF NEW YORK

Administered by the following:

Hon. Frank Mann.....	Tenement House Commissioner
Hon. Thomas J. Drennan.....	Fire Commissioner
Hon. William E. Walsh.....	Superintendent of Buildings, Manhattan
Hon. Albert E. Kleinert.....	Superintendent of Buildings, Brooklyn
Hon. Patrick J. Reville.....	Superintendent of Buildings, Bronx
Hon. John W. Moore.....	Superintendent of Buildings, Queens
Hon. William J. McDermott.....	Superintendent of Buildings, Richmond

WITH MARGINAL NOTES

Note.—Members of the New York Society of Architects desiring further information upon this subject may apply to the

COMMITTEE ON CITY ZONE LAWS

Walter H. Valckening, Chm.	Albert Ulrichs, Sr., V.-Chm.	John H. Knobel, Secretary
Waldernai H. Mortensen	Louis Almendinger	William H. Corwin

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Note—Figures and letters refer to the sections and sub-sections of the Resolution.

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BUILDING ZONE RESOLUTION

(Adopted July 25, 1916)

A resolution regulating and limiting the height and bulk of buildings hereafter erected and regulating and determining the area of yards, courts and other open spaces, and regulating and restricting the location of trades and industries and the location of buildings designed for specified uses and establishing the boundaries of districts for the said purposes.

Powers of this law regulating heights, areas, etc.

DEFINITION

ARTICLE NO. 1

SEC. 1. DEFINITIONS.—Certain words in this resolution are defined for the purposes thereof as follows:

(a) Words used in the present tense include the future; the singular number includes the plural and the plural the singular; the word "lot" includes the word "plot"; the word "building" includes the word "structure."

Singular and plural terms.

(b) The "street line" is the dividing line between the street and the lot.

Defining building line.

(c) The "width of the street" is the mean of the distance between the sides thereof within a block. Where a street borders a public place, public park or navigable body of water the width of the street is the mean width of such street plus the width, measured at right angles to the street line, of such public place, public park or body of water.

Width of street.

(d) The "curb level," for the purpose of measuring the height of any portion of a building, is the mean level of the curb in front of such portion of the building. But where a building is on a corner lot the curb level is the mean level of the curb on the street of greatest width. If such greatest width occurs on more than one street the curb level is the mean level of the curb on that street of greatest width which has the highest curb elevation. The "curb level" for the purpose of regulating and determining the area of yards, courts and open spaces is the mean level of the curb at that front of the building where there is the highest curb elevation. Where no curb elevation has been established or the building does not adjoin the street the average ground level of the lot shall be considered the curb level.

Curb level measurements.

(e) A "street wall" of a building, at any level, is the wall or part of the building nearest to the street line.

Street wall.

(f) The "height of a building" is the vertical distance measured in the case of flat roofs from the curb level to the level of the highest point of the roof beams adjacent to the street wall, and in the case of pitched roofs from the curb level to the mean height level of the gable. Where no roof beams exist or there are structures wholly or partly above the roof the height shall be measured from the curb level to the level of the highest point of the building. Where a building is a tenement house as defined in the Tenement House Law the height of the building on the street shall be measured as prescribed in said law for the measurement of the height of a tenement house and such measurement shall be from the curb level as that term is used in said law.

Schedule heights of buildings.

(g) The "depth of a lot" is the mean distance from the street line of the lot to its rear line measured in the general direction of the side lines of the lot.

Average depth of lot.

(h) A "rear yard" is an open unoccupied space on the same lot with a building between the rear line of the building and the rear line of the lot.

Rear yard; formation.

(i) The "depth of a rear yard" is the mean distance between the rear line of the building and the rear line of the lot.

Rear yard; how measured.

Lots back to back must have yards on rear except in A Districts.

Court definition.

Yard and court levels in reference to curb.

Yard and court dimensions are to be taken on same plane.

OUTER COURT
How measured.

(j) Lots or portions of lots shall be deemed "back to back" when they are on opposite sides of the same part of a rear line common to both and the opposite street lines on which the lots front are parallel with each other or make an angle with each other of not over 45 degrees.

(k) A "court" is an open unoccupied space, other than a rear yard, on the same lot with a building. A court not extending to the street or to a rear yard is an "inner court." A court extending to the street or a rear yard is an "outer court." A court on the lot line extending through from the street to a rear yard or another street is a "side yard."

(l) The "height of a yard or a court" at any given level shall be measured from the lowest level of such yard or court as actually constructed or from the curb level, if higher, to such level. The highest level of any given wall bounding a court or yard shall be deemed to be the mean height of such wall. Where a building is a tenement house, as defined in the Tenement House Law, the height of a yard or a court shall be measured as prescribed in such law.

(m) The "least dimension" of a yard or court at any level is the least of the horizontal dimensions of such yard or court at such level. If two opposite sides of a yard or court are not parallel the horizontal dimensions between them shall be deemed to be the mean distance between them.

(n) The "length of an outer court" at any given point shall be measured in the general direction of the side lines of such court from the end opposite the end opening on a street, or a rear yard, to such point.

USE DISTRICTS

ARTICLE NO. 2

3 types of uses:
Residence
Business
Unrestricted.
Read in conjunction
with Sec. 6 regulat-
ing existing bldgs.

SEC. 2. USE DISTRICTS.—For the purpose of regulating and restricting the location of trades and industries and the location of buildings designed for specified uses, the City of New York is hereby divided into three classes of districts: (1) residence districts, (2) business districts, and (3) unrestricted districts; as shown on the use district map which accompanies this resolution and is hereby declared to be part hereof. The use districts designated on said map are hereby established. The use district map designations and map designation rules which accompany said use district map are hereby declared to be part thereof. No building or premises shall be erected or used for any purpose other than a purpose permitted in the use district in which such building or premises is located.

For dwellings.
For tenements.
For boarding houses.
For hotels with more than 30 sleeping rooms.
For clubs.
For schools.
For libraries.
For museums (public).
For philanthropic institutions.
For hospitals.
For sanitariums.
For R. R. stations.
For garages (5 cars only).

SEC. 3. RESIDENCE DISTRICTS.—In a residence district no building shall be erected other than a building, with its usual accessories, arranged, intended or designed exclusively for one or more of the following specified uses:

(1) Dwelling, which shall include dwellings for one or more families and boarding houses and also hotels which have thirty or more sleeping rooms.

(2) Clubs, excepting clubs the chief activity of which is a service customarily carried on as a business.

(3) Churches.

(4) Schools, libraries or public museums.

(5) Philanthropic or eleemosynary uses or institutions, other than correctional institutions.

(6) Hospitals and sanitariums.

(7) Railroad passenger stations.

(8) Farming, truck gardening, nurseries or green houses.

In a residence district no building or premises shall be used for any use other than a use above specified for which buildings may be

erected and for the accessory uses customarily incident thereto. The term accessory use shall not include a business nor shall it include any building or use not located on the same lot with the building or use to which it is accessory. A private garage for more than five motor vehicles shall not be deemed an accessory use.

SEC. 4. BUSINESS DISTRICTS.—(a). In a business district no building or premises shall be used, and no building shall be erected which is arranged, intended or designed to be used, for any of the following specified trades, industries or uses:

- (1) Ammonia, chlorine or bleaching powder manufacture.
- (2) Asphalt manufacture or refining.
- (3) Assaying (other than gold or silver).
- (4) Blacksmithing or horseshoeing.
- (5) Boiler making.
- (6) Brewing or distilling of liquors.
- (7) Carpet cleaning.
- (8) Celluloid manufacture.
- (9) Crematory.
- (10) Distillation of coal, wood or bones.
- (11) Dyeing or dry cleaning.
- (12) Electric central station power plant.
- (13) Fat rendering.
- (14) Fertilizer manufacture.
- (15) Garage for more than five motor vehicles, not including warehouse where motor vehicles are received for dead storage only, and not including a salesroom where motor vehicles are kept for sale or for demonstration purposes only.
- (16) Gas (illuminating or heating) manufacture or storage.
- (17) Glue, size and gelatine manufacture.
- (18) Incineration or reduction of garbage, offal, dead animals or refuse.
- (19) Iron, steel, brass or copper works.
- (20) Junk, scrap paper or rag storage or baling.
- (21) Lamp black manufacture.
- (22) Lime, cement or plaster of Paris manufacture.
- (23) Milk bottling and distributing station.
- (24) Oil cloth or linoleum manufacture.
- (25) Paint, oil, varnish or turpentine manufacture.
- (26) Petroleum refining or storage.
- (27) Printing ink manufacture.
- (28) Raw hides or skins—storage, curing or tanning.
- (29) Repair shop for motor vehicles.
- (30) Rubber manufacture from the crude material.
- (31) Saw or planing mill.
- (32) Shoddy manufacture or wool scouring.
- (33) Slaughtering of animals.
- (34) Smelting.
- (35) Soap manufacture.
- (36) Stable for more than five horses.
- (37) Starch, glucose or dextrine manufacture.
- (38) Stock yards.
- (39) Stone or monumental works.
- (40) Sugar refining.
- (41) Sulphurous, sulphuric, nitric or hydrochloric acid manufacture.
- (42) Tallow, grease or lard manufacturing or refining.
- (43) Tar distillation or manufacture.
- (44) Tar roofing or tar waterproofing manufacture.

(b) In a business district no building or premises shall be used and no building shall be erected, which is arranged, intended or designed to be used for any trade, industry or use that is noxious or offensive by reason of the emission of odor, dust, smoke, gas or noise; but car barns or places of amusement shall not be excluded.

Prohibited uses of buildings in business districts.

Includes chicken slaughter houses.

Garages for 5 cars or less permitted regardless of ownership or use of the cars.

Gasolene service station is permitted.

Trades causing odors, dust or smoke forbidden in business district.

25 p. c. of floor space for manufacturing permitted in conjunction with the business on premises; 75 p. c. must remain as business use.

Unrestricted districts defined.

Present use of building may be continued.

A prohibited use may be substituted for present use providing it is not extended beyond present use.

Alterations permitted to building not to exceed 50 p. c. of cost of superstructures. Buildings built from plans filed on or before July 25, 1916, are considered as existing buildings; garages and stable are interchange-able.

Extension of present use throughout building.

Structural alterations.

Change of use in residence district.

Prohibited change of use in residence district.

Limit of change of business in residence district.

An authorized change may be changed, subject to limitations.

Board of appeals' power of review.

Extending existing buildings.

(c) In a business district no building or premises shall be used, and no building shall be erected, which is arranged, intended or designed to be used for any kind of manufacturing, except that any kind of manufacturing not included within the prohibitions of paragraphs (a) and (b) of this section may be carried on, provided not more than 25 per cent. of the total floor space of the building is so used, but space equal to the area of the lot may be so used in any case, although in excess of said 25 per cent. The printing of a newspaper shall not be deemed manufacturing. No use permitted in a residence district by section 3 shall be excluded from a business district.

SEC. 5. UNRESTRICTED DISTRICTS.—The term "unrestricted district" is used to designate the districts for which no regulations or restrictions are provided by this article.

SEC. 6. EXISTING BUILDINGS AND PREMISES.—(a) Any use existing in any building or premises at the time of the passage of this resolution and not conforming to the regulations of the use district in which it is maintained, may be continued therein. No existing building designed, arranged, intended or devoted to a use not permitted by this article in the district in which such use is located shall be enlarged, extended, reconstructed or structurally altered unless such use is changed to a use permitted in the district in which such building is located. Such building may, however, be reconstructed or structurally altered to an extent not greater than 50 per cent. of the value of the building, exclusive of foundations, provided that no use in such building is changed or extended, except as authorized in paragraph (b) of this section, and provided, further, that no use included in any one of the enumerated subdivisions of paragraph (a) of section 4 is changed into a use included in any other enumerated subdivision of paragraph (a) of section 4 or into a use prohibited by paragraph (b) of section 4, and also provided that no use prohibited by paragraph (b) of section 4 is changed into another use prohibited by paragraph (b) of section 4 or into a use included in an enumerated subdivision of paragraph (a) of section 4.

(b) Any use existing in any building or premises at the time of the passage of this resolution and not conforming to the regulations of the use district in which it is maintained may be changed, and such use may be extended throughout the building, provided that in either case:

(1) No structural alteration shall be made in the building, except as authorized by paragraph (a) of this section, and

(2) In a residence district no portion of a building devoted to a use included in subdivision 1 of section 3 shall be changed to any use prohibited in a residence district, and

(3) In a residence district no building or premises, unless devoted to one of the uses that is by section 4 prohibited in a business district, shall be changed to any of such uses, and

(4) In a residence or business district no building or part thereof and no premises unless devoted to one of the uses that is by paragraph (a) or (b) of section 4 prohibited in a business district, shall be changed to any of such uses.

If a use is changed as authorized in this section, the new use may thereafter be changed, subject to the limitations imposed by subdivisions 1, 2, 3 and 4 of this paragraph.

SEC. 7. USE DISTRICT EXCEPTIONS.—The Board of Appeals, created by chapter 503 of the laws of 1916, may, in appropriate cases, after public notice and hearing, and subject to appropriate conditions and safeguards, determine and vary the application of the use district regulations herein established in harmony with their general purpose and intent as follows:

(a) Permit the extension of an existing building and the existing use thereof upon the lot occupied by such building at the time of the passage of this resolution or permit the erection of an additional building upon a lot occupied at the time of the passage of this resolution by a commercial or industrial establishment and which additional building is a part of such establishment;

(b) Where a use district boundary line divides a lot in a single ownership at the time of the passage of this resolution, permit a use authorized on either portion of such lot to extend to the entire lot, but not more than 25 feet beyond the boundary line of the district in which such use is authorized;

*(c) Permit the extension of an existing or proposed building into a more restricted district under such conditions as will safeguard the character of the more restricted district;

(d) Permit in a residence district a central telephone exchange or any building or use in keeping with the uses expressly enumerated in section 3 as the purposes for which buildings or premises may be erected or used in a residence district;

(e) Permit in a business district the erection or extension of a garage or stable in any portion of a street between two intersecting streets in which portion there exists a garage for more than five motor vehicles or a stable for more than five horses at the time of the passage of this resolution;

(f) Grant in undeveloped sections of the city temporary and conditional permits for not more than two years for structures and uses in contravention of the requirements of this article;

(g) Permit in a business or residence district the erection of a garage provided the petitioner files the consents duly acknowledged of the owners of 80 per cent. of the frontage deemed by the Board to be immediately affected by the proposed garage. Such permit shall specify the maximum size or capacity of the garage and shall impose appropriate conditions and safeguards upon the construction and use of the garage.

Additional buildings permitted.

Lots located in 2 use districts. Extending building into more restricted districts.

Telephone exchanges permitted in residence districts.

Permits garage on block with existing stable or garage in business district.

Temporary buildings in outlying sections.

Permits garage in a business or residence district, consents of 80 p. c. of frontage deemed effected by the Board.

HEIGHT DISTRICTS

ARTICLE NO. 3

SEC. 8. HEIGHT DISTRICTS.—For the purpose of regulating and limiting the height and bulk of buildings hereafter erected, the City of New York is hereby divided into five classes of districts: (a) one times districts, (b) one and one-quarter times districts, (c) one and one-half times districts, (d) two times districts, (e) two and one-half times districts; as shown on the height district map which accompanies this resolution and is hereby declared to be part hereof. The height districts designated on said map are hereby established. The height district map designations and map designation rules which accompanies said height district map are hereby declared to be part thereof. No building or part of a building shall be erected except in conformity with the regulations herein prescribed for the height district in which such building is located.

(a) In a one times district no building shall be erected to a height in excess of the width of the street, but for each one foot that the building or a portion of it sets back from the street line two feet shall be added to the height limit of such building or such portion thereof.

(b) In a one and one-quarter times district no building shall be erected to a height in excess of one and one-quarter times the width of the street, but for each one foot that the building or a portion of it sets back from the street line two and one-half feet shall be added to the height limit of such building or such portion thereof.

(c) In a one and one-half times district no building shall be erected to a height in excess of one and one-half times the width of the street, but for each one foot that the building or a portion of it sets back from the street line three feet shall be added to the height limit of such building or such portion thereof.

(d) In a two times district no building shall be erected to a height in excess of twice the width of the street, but for each one foot that the building or a portion of it sets back from the street line four feet shall be added to the height limit of such building or such portion thereof.

Five height districts. For boundary lines see maps.

One times district set back 1 ft. 0" to 2 ft. 0".

1 ¼ times district set back 1 ft. 0" to 2 ft. 6".

1 ½ times district set back 1 ft. 0" to 3 ft. 0" in height.

2 times district set back 1 ft. 0" to 4 ft. 0".

* Amendment to Section 7, Paragraph C, adopted March 23, 1917.

2½ times district
set back 1 ft. 0''
to 5 ft. 0''.

Height exceptions
for streets less than
50 ft. and over 100
ft. wide.

Corner buildings
where streets are of
two widths.

Dormers and eleva-
tors may extend
above height limit if
frontage does not
exceed 60 p. c. of
building frontage.

Towers or parts of
buildings covering
25 p. c. of lot area.

Wall may exceed
height required for
district by the aver-
age of the excess
height of surround-
ing walls 50 ft. on
each side and those
opposite added to-
gether.

Cornice projection.
5 p. c. of street
width but not over
5 ft. 0''. Cornices
continuing around
corner cannot project
more than 5 p. c. of
that street. Parapet
exceptions.

Church spires, chim-
neys, etc., exempted.

Façade may be in-
creased in height
equal to the average
height of adjoining
and opposite façades.

(c) In a two and one-half times district no building shall be erected to a height in excess of two and one-half times the width of the street, but for each one foot that the building or a portion of it sets back from the street line five feet shall be added to the height limit of such building or such portion thereof.

SEC. 9. HEIGHT DISTRICT EXCEPTIONS.—(a) On streets less than 50 feet in width the same height regulations shall be applied as on streets 50 feet in width and, except for the purposes of paragraph (d) of this section, on streets more than 100 feet in width the same height regulation shall be applied as on streets 100 feet in width.

(b) Along a narrower street near its intersection with a wider street, any building or any part of any building fronting on the narrower street within 100 feet, measured at right angles to the side of the wider street, shall be governed by the height regulations provided for the wider street. A corner building on such intersecting streets shall be governed by the height regulations provided for the wider street for 150 feet from the side of such wider street, measured along such narrower street.

(c) Above the height limit at any level for any part of a building a dormer, elevator bulkhead or other structure may be erected provided its frontage length on any given street be not greater than 60 per cent. of the length of such street frontage of such part of the building. Such frontage length of such structure at any given level shall be decreased by an amount equal to one per cent. of such street frontage of such part of the building for every foot such level is above such height limit. If there are more than one such structures, their aggregate frontage shall not exceed the frontage length above permitted at any given level.

(d) If the area of the building is reduced so that above a given level it covers in the aggregate not more than 25 per cent. of the area of the lot, the building above such level shall be excepted from the foregoing provisions of this article. Such portion of the building may be erected to any height, provided that the distance which it sets back from the street line on each street on which it faces, plus half of the width of the street, equals at least 75 feet. But for each one per cent. of the width of the lot on the street line that such street wall is less in length than such width of the lot, such wall may be erected four inches nearer to the street line.

(e) When at the time plans are filed for the erection of a building there are buildings in excess of the height limits herein provided within 50 feet of either end of the street frontage of the proposed building or directly opposite such building across the street, the height to which the street wall of the proposed building may rise shall be increased by an amount not greater than the average excess height of the walls on the street line within 50 feet of either end of the street frontage of the proposed building and at right angles to the street frontage of the proposed building on the opposite side of the street. The average amount of such excess height shall be computed by adding together the excess heights above the prescribed height limit for the street frontage in question of all of the walls on the street line of the buildings and parts of buildings within the above defined frontage and dividing the sum by the total number of buildings and vacant plots within such frontage.

(f) Nothing in this article shall prevent the projection of a cornice beyond the street wall to an extent not exceeding five per cent. of the width of the street nor more than five feet in any case. Nothing in this article shall prevent the erection above the height limit of a parapet wall or cornice solely for ornament and without windows extending above such height limit not more than five per cent. of such height limit, but such parapet wall or cornice may in any case be at least five and one-half feet high above such height limit.

(g) The provisions of this article shall not apply to the erection of church spires, belfries, chimneys, flues or gas holders.

(h) Where not more than 50 feet of a street frontage would otherwise be subjected to a height limit lower than that allowed immediately beyond both ends of such frontage, the height limit on such frontage shall be equal to the lesser of such greater height limits.

(i) If an additional story or stories are added to a building existing at the time of the passage of this resolution, the existing walls of which are in excess of the height limits prescribed in this article, the height limits for such additional story or stories shall be computed from the top of the existing walls as though the latter were not in excess of the prescribed height limits and the carrying up of existing elevator and stair enclosures shall be exempted from the provisions of this article.

Additional stories.
Considers walls as conforming to legal height for streets on which they front if existing prior to July 25, 1916. Yard and court walls may be carried higher under same rule.

AREA DISTRICTS

ARTICLE NO. 4

SEC. 10. AREA DISTRICTS.—For the purpose of regulating and determining the area of yards, courts and other open spaces for buildings hereafter erected, the City of New York is hereby divided into five classes of area districts: A, B, C, D and E; as shown on the area district map which accompanies this resolution and is hereby declared to be part hereof. The area districts designated on said map are hereby established. The area district map designations and map designation rules which accompany said area district map are hereby declared to be part thereof. No building or part of a building shall be erected except in conformity with the regulations herein prescribed for the area district in which such building is located. Unless otherwise expressly provided the term rear yard, side yard, outer court or inner court when used in this article shall be deemed to refer only to a rear yard, side yard, outer court or inner court required by this article. No lot area shall be so reduced or diminished that the yards, courts or open spaces shall be smaller than prescribed in this article.

Interpretation of yards and courts.

Yard and court deductions prohibited.

SEC. 11. A DISTRICTS.—In an A district a court at any given height shall be at least one inch in least dimension for each one foot of such height.

Courts 1" width to 1 ft. 6" of height.

SEC. 12. B DISTRICTS.—In a B district a rear yard at any given height shall be at least two inches in least dimension for each one foot of such height. The depth of a rear yard at its lowest level shall be at least 10 per cent. of the depth of the lot, but need not exceed 10 feet at such level. An outer court or a side yard at any given height shall be at least one inch in least dimension for each one foot of such height. An outer court at any given point shall be at least one and one-half inches in least dimension for each one foot of length. But for each one foot that an outer court at any given height would, under the above rules, be wider in its least dimension for such height than the minimum required by its length, one inch shall be deducted from the required least dimension for such height for each 24 feet of such height. A side yard for its length within 50 feet of the street may for the purposes of the above rule be considered an outer court.

Applies to all buildings in A "B" district, whether tenements, hotels, stores, dwellings, warehouses or factories. All lots over 100 ft. deep are considered as 100 ft. deep. No length restriction for side yards. For yard sizes see sec. 16, for inner court sizes see sec. 17.

SEC. 13. C DISTRICTS.—(a) In a C district a rear yard at any given height shall be at least three inches in least dimension for each one foot of such height. The depth of a rear yard at its lowest level shall be at least 10 per cent. of the depth of the lot, but need not exceed 10 feet at such level. An outer court or a side yard at any given height shall be at least one and one-half inches in least dimension for each one foot of such height. An outer court at any given point shall be at least one and one-half inches in least dimension for each one foot of length. On a lot not more than 30 feet in mean width an outer court or a side yard at any given height shall be not less than one inch in least dimension for each one foot of such height, and an inner court at any given height shall be either (1) not less than two inches in least dimension for each one foot of such height or (2) it shall be of an equivalent area as hereinafter specified in paragraph (c) of section 17.

Applies to all buildings, same as B district.

Special sizes for lots 30 ft. 0" or less in width.

No length restrictions for side yards.

(b) If the owner or owners of any part of a C district set aside perpetually for the joint recreational use of the residents of such part designated by them, an area at least equal to 10 per cent. of the area of such part in addition to all yard and court requirements for a B district, such part shall be subject to the regulations herein prescribed for a B district. Such joint recreational space shall be composed of

Recreational or playground space, if provided in C districts the B district restrictions for yards and courts may be applied.

Can only be approved by Board of Appeals.

Yard levels control dimension.
Applies to all buildings same as B and C districts.
Yards in business districts 10 p. c. of lot depth but need not be over 10 ft. 0".
Yards in residence districts 20 p. c. of lot depth but need not be over 20 ft. 0".
No length restriction for side yards.

Special sizes for lots 30 ft. 0" or less.

Percentage of occupation.
On residence streets 60 p. c. for interior lots, 80 p. c. for corner lots at curb level, corner lots over 8,000 sq. ft. considered as interior lots.

Recreational or playground space, if provided in D districts, the C district restriction for yards and courts may be applied.
Can only be approved by Board of Appeals.

Buildings on residence streets in E districts must have open space on one side at least.

Yards in business districts 15 p. c. of lot depth but need not be over 15 ft. 0" and for residence districts 25 p. c. but need not be over 25 ft. 0" deep.

Courts and side yards 2 1/2" for each 1 ft. of height.

Lots over 50 ft. mean dimension 2" to 1 ft. of height.

Outer courts 2 1/2" to 1 ft. of length.

one or more tracts, each of which shall be at least 40 feet in least dimension and 5,000 square feet in area and shall be approved by the Board of Appeals as suitable for the joint recreational use of such residents.

SEC. 14. D DISTRICTS.—(a) In a D district a rear yard at any given height shall be at least four inches in least dimension for each one foot of such height. The depth of a rear yard at its lowest level shall be at least 10 per cent. of the depth of the lot, but need not exceed 10 feet at such level. If a building in a D district is located in a residence district as designated on the use district map, the depth of a rear yard at its lowest level shall be at least 20 per cent. of the depth of the lot, but need not exceed 20 feet at such level. However, for each one foot in excess of 10 feet of the depth of such rear yard at its lowest level, there may be substituted one foot of depth of unoccupied space across the whole width of the front of the lot at the curb level between the street line and the street wall of the building.

(b) In a D district an outer court or a side yard at any given height shall be at least two inches in least dimension for each one foot of such height. An outer court at any given point shall be at least two inches in least dimension for each one foot of length. On a lot not more than 30 feet in mean width an outer court or a side yard at any given height shall be not less than one and one-half inches in least dimension for each one foot of such height. On such lot an outer court at any given point shall be not less than one and one-half inches in least dimension for each one foot of length. On such lot an inner court at any given height shall be either (1) not less than three inches in least dimension for each one foot of such height or (2) it shall be of an equivalent area as specified in paragraph (c) of section 17.

(c) In a D district no building located within a residence district as designated on the use district map shall occupy at the curb level more than 60 per cent. of the area of the lot, if an interior lot, or 80 per cent. if a corner lot. In computing such percentage any part of the area of any corner lot in excess of 8,000 square feet shall be considered an interior lot.

(d) If the owner or owners of any part of a D district set aside perpetually for the joint recreational use of the residents of such part designated by them, an area at least equal to 10 per cent. of the area of such part in addition to all yard and court requirements for a C district, such part shall be subject to the regulations herein prescribed for a C district. Such joint recreational space shall be composed of one or more tracts, each of which shall be at least 40 feet in least dimension and 5,000 square feet in area and shall be approved by the Board of Appeals as suitable for the joint recreational use of such residents.

SEC. 15. E DISTRICTS.—(a) In an E district a rear yard at any given height shall be at least five inches in least dimension for each one foot of such height. The depth of a rear yard at its lowest level shall be at least 15 per cent. of the depth of the lot, but need not exceed 15 feet at such level. If a building in an E district is located in a residence district as designated on the use district map, the depth of a rear yard at its lowest level shall be at least 25 per cent. of the depth of the lot, but need not exceed 25 feet at such level. However, for each one foot in excess of 10 feet of the depth of such rear yard at its lowest level there may be substituted one foot of depth of unoccupied space across the whole width of the front of the lot at the curb level between the street line and the street wall of the building. In an E district on at least one side of every building located within a residence district there shall be a side yard along the side lot line for the full depth of the lot or back to the rear yard.

(b) In an E district an outer court or side yard at any given height shall be at least two and one-half inches in least dimension for each one foot of such height. On a lot not more than 50 feet mean width an outer court or a side yard at any given height shall be at least two inches in least dimension for each one foot of such height. An outer court at any given point shall be at least two and one-half inches in least dimension for each one foot of length.

(c) In an E district no building located within a residence district as designated on the use district map shall occupy at the curb level more than 50 per cent. of the area of the lot, if an interior lot, or 70 per cent. if a corner lot, and above a level 18 feet above the curb no building shall occupy more than 30 per cent. of the area of the lot, if an interior lot, or 40 per cent. if a corner lot. In computing such percentage any part of the area of any corner lot in excess of 8,000 square feet shall be considered an interior lot.

SEC. 16. REAR YARDS.—(a) Except in A districts, for lots or portions of lots that are back to back there shall be rear yards extending along the rear lot lines of such lots or portions of lots wherever they are more than 55 feet back from the nearest street. Such rear yard shall be at least of the area and dimensions herein prescribed for the area district in which it is located at every point along such rear lot line. Within 55 feet of the nearest street no rear yards shall be required. No rear yard shall be required on any corner lot nor on the portion of any lot that is back to back with a corner lot.

(b) Where a building is not within a residence district as designated on the use district map, the lowest level of a rear yard shall not be above the sill level of the second story windows, nor in any case more than 23 feet above the curb level. Where a building is within a residence district the lowest level of a rear yard shall not be above the curb level, except that not more than 40 per cent. of the area of the yard may be occupied by the building up to a level 18 feet above the curb level. In the case of a church, whether within or without a residence district such 40 per cent. may be occupied up to a level of 30 feet above the curb level.

(c) Chimneys or flues may be erected within a rear yard provided they do not exceed five square feet in area in the aggregate and do not obstruct ventilation.

(d) Except in A districts, where a building on an interior lot between lots for which rear yards are required runs through the block from street to street or to within 55 feet of another street, there shall be on each side lot line above the sill level of the second story windows and in any case above a level 23 feet above the curb level a court of at least equivalent area at any given height to that required for an inner court at such height and having a least dimension not less than that required for an outer court at the same height.

(e) When a proposed building is on a lot which is back to back with a lot or lots on which there is a building or buildings having rear yards less in depth than would be required under this article, the depth of the rear yard of the proposed building shall not be required to be greater at any given level than the average depth of the rear yards directly back to back with it at such level, but in no case shall the depth of such rear yard be less at any height than the least dimension prescribed for an outer court at such height.

SEC. 17. COURTS.—(a) If a room in which persons live, sleep, work or congregate receives its light and air in whole or in part directly from an open space on the same lot with the building, there shall be at least one inner court, outer court, side yard or rear yard upon which a window or ventilating skylight opens from such room. Such inner court, outer court or side yard shall be at least of the area and dimensions herein prescribed for the area district in which it is located. Such rear yard shall be at least of the area and dimensions herein prescribed for an inner court in the area district in which it is located. In an A district, such inner court, outer court, side yard or rear yard shall be at least of the area and dimensions herein prescribed for a court in such district. The unoccupied space within the lot in front of every part of such window shall be not less than three feet, measured at right angles thereto. Courts, yards and other open spaces, if provided in addition to those required by this section, need not be of the area and dimensions herein prescribed. The provisions of this section shall not be deemed to apply to courts or shafts for bathrooms, toilet compartments, hallways or stairways.

On residence streets at curb level 50 p. c. for interior lots and 70 p. c. for corner lots.

At 18 ft. 0" above curb 30 p. c. for interior lots and 40 p. c. for corner lots.

Corner lots over 8,000 ft. considered interior lots.

This section applies to all area districts.

Rear yards not required for lots 55 ft. 0" or less nor for lots not back to back.

Rear yard levels. Limit 23 ft. 0" above curb, for business districts.

Yard levels in residence districts must be at curb levels.

40 p. c. of yard area may be built upon to 18 ft. 0" height above curb. Exception for churches.

Chimneys 5 ft. 0" sq. ft. may be built in rear yard. Not allowed in side yards or inner and outer courts unless courts are made wider.

Exception, allowing omission of courts and yards depending on circumstances of adjoining lots.

Depth of rear yards may be computed according to the rated average of other yards back to back with proposed building.

Legal sized courts must be provided if windows are placed in walls to ventilate rooms, same must. If extra courts and yards are provided for special reason or design such are not controlled by this law as to size. No control over vent spaces for toilets, etc. Building Code prevails.

Least dimension for outer, inner courts or side yards 4 ft. 0". The 3 ft. 0" dimension is inoperative if in conflict with Building Code.

Inner court sizes with exceptions. Inner courts connected to side yards may be reduced in size. Where rear yards are not required but side courts are then a rear court must be provided and deemed as a rear yard.

Returns of cornices may extend 5 ft. 0" into street, courts or side yards with 5 ft. 0" projection.

Projection of cornices on detached residence in an E district.

Fire escapes, etc., projection 4 ft. 0" but if of open lattice can project 8 ft. 0" into rear yards and inner courts.

Note percentage of occupation of F. E. as to court area.

Corners of courts and yards may be cut 7 ft. 0". Must be figured as occupied area.

Cutting must not reduce minimum sizes of courts.

Offsets of depth must not exceed width. 6 ft. 0" minimum width.

Refers to the necessity of providing courts, etc., and to be reckoned in computing the percentage.

Exempts old buildings and those for which plans were filed on July 25, 1916, such buildings are also considered as old structures. Court and yard sizes to be figured for additional stories at the present tops of walls, and widths and depths are to be computed for these additional story heights. Thus a 36 ft. 0" wall or 3 stories added shall have court and yard widths figured for this height of wall as if from curb.

(b) The least dimension of an outer court, inner court or side yard at its lowest level shall be not less than four feet, except that where the walls bounding a side yard within the lot are not more than 25 feet in mean height and not more than 40 feet in length, such least dimension, except in an E district, may be not less than three feet. Where any outer court opens on a street such street may be considered as part of such court.

(c) The least dimension of an inner court at any given height shall be not less than that which would be required in inches for each one foot of height for a rear yard of the same height, except that an inner court of equivalent area may be substituted for said court, provided that for such area its least dimension be not less than one-half of its greatest dimension. If an inner court is connected with a street by a side yard for each one foot that such side yard is less than 65 feet in depth from the street, one square foot may be deducted from the required area of the inner court for each 15 feet of height of such court. If the lot is not required under this resolution to have a rear yard, an outer court, not opening on a street, shall open at any level on an inner court on the rear line of the lot and such inner court shall be deemed a rear yard in such case.

SEC. 18. AREA DISTRICT EXCEPTIONS.—(a) The area required in a court or yard at any given level shall be open from such level to the sky unobstructed, except for the ordinary projections of skylights and parapets above the bottom of such court or yard, and except for the ordinary projections of window sills, belt courses, cornices and other ornamental features to the extent of not more than four inches. However, where a side yard or an outer court opens on a street a cornice may project not over five feet into such side yard or outer court within five feet of the street wall of the building. And provided that in an E district a one-family residence, detached on all sides and having on one side a side yard of a clear and unobstructed width of not less than five feet, may have a cornice or eave projecting not more than two feet six inches into a side yard on the opposite side.

(b) An open or lattice enclosed iron fire escape, fireproof outside stairway or solid-floored balcony to a fire tower may project not more than four feet into a rear yard or into an inner court, except that an open or lattice enclosed iron fire escape may project not more than eight feet into a rear yard or into an inner court when it does not occupy more than 20 per cent. of the area of such inner court.

(c) A corner of a court or yard may be cut off between walls of the same building provided that the length of the wall of such cut-off does not exceed seven feet.

(d) An offset to a court or yard may be considered as a part of such court or yard provided that it is no deeper in any part than it is wide on the open side and that such open side be in no case less than six feet wide.

(e) If a building is erected on the same lot with another building the several buildings shall, for the purposes of this article, be considered as a single building. Any structure, whether independent of or attached to a building, shall for the purposes of this article be deemed a building or a part of a building.

(f) If an additional story or stories are added to a building existing at the time of the passage of this resolution, the courts and yards of which do not conform to the requirements of this article, the least dimensions of yards and courts shall be increased from the top of the existing yard or court walls, as though they were of the prescribed dimensions at such heights and the carrying up of existing elevator and stair enclosures shall be exempted from the provisions of this article.

GENERAL ADMINISTRATIVE

ARTICLE No. 5

SEC. 19. INTERPRETATION; PURPOSE.—In interpreting and applying the provisions of this resolution, they shall be held to be the minimum requirements adopted for the promotion of the public health, safety, comfort, convenience and general welfare. It is not intended by this resolution to repeal, abrogate, annul or in any way to impair or interfere with any existing provision of law or ordinance or any rules, regulations or permits previously adopted or issued or which shall be adopted or issued pursuant to law relating to the use of buildings or premises; nor is it intended by this resolution to interfere with or abrogate or annul any easement, covenants or other agreements between parties; provided, however, that where this resolution imposes a greater restriction upon the use of buildings or premises or upon heights of buildings or requires larger yards, courts or other open spaces than are imposed or required by such existing provision of law or ordinance or by such rules, regulations or permits or by such easement, covenants or agreements, the provisions of this resolution shall control.

SEC. 20. RULES AND REGULATIONS; MODIFICATIONS OF PROVISIONS.—The Board of Standards and Appeals, created by chapter 503 of the laws of 1916, shall adopt from time to time such rules and regulations as they may deem necessary to carry into effect the provisions of this resolution. Where there are practical difficulties or unnecessary hardships in the way of carrying out the strict letter of the provisions of this resolution the Board of Appeals shall have power in a specific case to vary any such provision in harmony with its general purpose and intent, so that the public health, safety and general welfare may be secured and substantial justice done. Where the street layout actually on the ground varies from the street layout as shown on the use, height or area district map, the designation shown on the mapped street shall be applied by the Board of Appeals to the unmapped streets in such a way as to carry out the intent and purpose of the plan for the particular section in question. Before taking any action authorized in this section the Board of Appeals shall give public notice and hearing.

Board of Standards
and Appeals Duties,
power.

SEC. 21. UNLAWFUL USE; CERTIFICATE OF OCCUPANCY.—It shall be unlawful to use or permit the use of any building or premises or part thereof hereafter created, erected, changed or converted wholly or partly in its use or structure until a certificate of occupancy to the effect that the building or premises or the part thereof so created, erected, changed or converted and the proposed use thereof conform to the provisions of this resolution shall have been issued by the superintendent of buildings of the borough in which such building or premises is located, or, in the case of a tenement house as defined in the Tenement House Law, by the tenement house commissioner. In the case of such buildings or premises it shall be the duty of the superintendent of buildings or the tenement house commissioner, as the case may be, to issue a certificate of occupancy within ten days after a request for the same shall be filed in his office by any owner of a building or premises affected by this resolution, provided said building or premises, or the part thereof so created, erected, changed or converted, and the proposed use thereof, conforms with all the requirements herein set forth. Under rules and regulations of the Board of Standards and Appeals a temporary certificate of occupancy for a part of a building may be issued by the superintendent of buildings or the tenement house commissioner, as the case may be. Upon written request from the owner, the superintendent of buildings or the tenement house commissioner, as the case may be, shall issue a certificate of occupancy for any building or premises existing at the time of the passage of this resolution certifying after inspection the use of the building or premises and whether such use conforms to the provisions of this resolution.

Certificates:
For new buildings.
For present
occupancy.
For temporary
occupancy.
For changed or
converted build-
ings, wholly or
partly.

Jurisdiction as to tenements.
The Tenement House Commissioner.

As to all other types of buildings.
The Supt. of Bldgs. during construction.

As to completed buildings.

The Fire Commissioner.

Petitions must represent 50 p. c. of frontage of block to be changed.
Board of Estimate must act in 90 days.
20 p. c. of objectors on same front, opposite or on rear, can defeat.
Unanimous vote of Board of Estimate can approve.

Time limitation.
Special reference to garages.

SEC. 22. ENFORCEMENT. LEGAL PROCEDURE, PENALTIES.—This resolution shall be enforced by the tenement house commissioner, the fire commissioner and by the superintendent of buildings in each borough under the rules and regulations of the Board of Standards and Appeals. The tenement house commissioner shall enforce the provisions herein contained in so far as they affect or relate to tenement houses as defined by the Tenement House Law. The superintendent of buildings shall in each borough enforce the provisions herein contained in so far as they relate to buildings or premises other than tenement houses. The fire commissioner shall enforce the provisions herein contained in so far as they relate to the use of completed buildings or premises, or part thereof, other than tenement houses. For any and every violation of the provisions of this resolution or of the rules and regulations adopted thereunder, the owner, general agent or contractor of a building or premises where such violation has been committed or shall exist, and the lessee or tenant of an entire building or entire premises where such violation has been committed or shall exist, and the owner, general agent, contractor, lessee or tenant of any part of a building or premises in which part such violation has been committed or shall exist, and the general agent, architect, builder, contractor or any other person who commits, takes part or assists in such violation or who maintains any building or premises in which any such violation shall exist, shall be liable to the same legal procedure and the same penalties as are prescribed in any law, statute or ordinance for violations of the Building Code, and for such violations the same legal remedies shall be had and they shall be prosecuted in the same manner as prescribed in any law or ordinance in the case of violations of said Building Code.

SEC. 23. AMENDMENTS, ALTERATIONS AND CHANGES IN DISTRICT LINES.—The Board of Estimate and Apportionment may from time to time on its own motion or on petition, after public notice and hearing, amend, supplement or change the regulations and districts herein established. Whenever the owners of 50 per cent. or more of the frontage in any district or part thereof shall present a petition duly signed and acknowledged to the Board of Estimate and Apportionment requesting an amendment, supplement, change or repeal of the regulations prescribed for such district or part thereof, it shall be the duty of the Board to vote upon said petition within 90 days after the filing of the same by the petitioners with the secretary of the Board. If, however, a protest against such amendment, supplement or change be presented, duly signed and acknowledged by the owners of 20 per cent. or more of any frontage proposed to be altered, or by the owners of 20 per cent. of the frontage immediately in the rear thereof, or by the owners of 20 per cent. of the frontage directly opposite the frontage proposed to be altered, such amendment shall not be passed except by the unanimous vote of the Board. If any area is hereafter transferred to another district by a change in district boundaries by an amendment, as above provided, the provisions of this resolution in regard to buildings or premises existing at the time of the passage of this resolution shall apply to buildings or premises existing at the time of passage of such amendment in such transferred area.

SEC. 24. COMPLETION AND RESTORATION OF EXISTING BUILDINGS.—(a) Nothing herein contained shall require any change in the plans, construction or designated use of a building for which a building permit has been heretofore issued, or plans for which are on file with the building superintendent or with the tenement house department at the time of the passage of this resolution, and a permit for the erection of which is issued within three months of the passage of this resolution and the construction of which, in either case, shall have been diligently prosecuted within a year of the date of such permit, and the ground story framework of which, including the second tier of beams, shall have been completed within such year, and which entire building shall be completed according to such plans as filed within five years from the date of the passage of this resolution. Provided, however, that any plan, other than a plan for a garage for more than five motor vehicles, filed with the building superintendent or with the tenement house department on July 26, or July 27, 1916, and a permit for the erection of which is issued prior to December 25, 1916,

shall be deemed to have been filed at the time of the passage of this resolution. Provided, also, that the Board of Appeals may, after public notice and hearing, extend for not to exceed one year the time within which such ground-story framework, including the second tier of beams, shall be completed in any case where, in the judgment of said Board, actual construction or fabrication was begun early enough to allow under the then existing conditions adequate time for completion as above specified, and where such construction or fabrication was diligently prosecuted and where such completion has been prevented by conditions impossible to foresee and beyond the control of the owner and builder.

(b) Nothing in this resolution shall prevent the restoration of a building wholly or partly destroyed by fire, explosion, act of God or act of the public enemy, or prevent the continuance of the use of such building or part thereof as such use existed at the time of such destruction of such building or part thereof or prevent a change of such existing use under the limitations provided in Section 6. Nothing in this resolution shall prevent the restoration of a wall declared unsafe by the superintendent of buildings or by a board of survey.

Restoration of damaged structures. Unsafe walls can be rebuilt with restrictions applying. Use may be changed, see Section 6.

SEC. 25. WHEN EFFECTIVE.—This resolution shall take effect immediately.

Effective from July 25, 1916, and for certain structures it was made effective as from July 27, 1916, see Amended Section No. 24.

WARNING to appellants, petitioners and others as to appearance at hearings of both the *Board of Appeals* and the *Board of Standards and Appeals*.

Notice is hereby given to all petitioners, appellants and applicants for relief at the hands of the Board of Standards and Appeals and of the Board of Appeals, and to all lawyers, architects and engineers representing owners or lessees in proceedings before these boards—

First, That if they do not appear in person or by representative at the hearing on their case, dismissal for lack of prosecution is likely to result.

Second, That due and ample notice of the date set for hearing is provided in the publication in this BULLETIN of the calendars of these boards, each case being set down by Calendar Number and premises under the date of the hearing.

Third, That no plea of ignorance of the date of the hearing can be entertained in view of this publication and of the posting of the calendars on the bulletin board in the offices of the board and of the further publication of the calendars in THE RECORD AND GUIDE and in various newspapers.

Fourth, That no one is entitled to written notice of the date for the hearing in his case and that the plea of failure to receive such notice is no excuse for neglect to appear.

It is to be noted that the business of these boards is to dispose of all cases promptly, for the reason that the pendency of an appeal or petition ties the hands of the administrative official in enforcing his order.

Therefore, no appeal or petition will be allowed to be hung up by reason of failure of the appellant or petitioner to file necessary data, or by any other method of delay.

JOHN P. LEO, *Chairman*.

PROCEDURE OF THE BOARD OF APPEALS

The Board of Appeals holds regular meetings on Tuesday of each week at 10 A. M., five members being necessary to constitute a quorum. All meetings are open to the public.

Applications for modification of provisions of the Building Zone Resolution should be made on Form 14A (copy of which is printed herewith).

If the application is not in proper form it is returned with a letter (Form 11A) and an application blank (Form 14A). This blank, properly filled out, should be filed in person, or by representative, in Room 914, Municipal Building, Manhattan.

So soon as the required information is supplied a Calendar Number is given the case and the applicant is advised of the date of the Calendar Call, as per Form 12A.

NOTICES TO PROPERTY OWNERS.—The applicant is then supplied with the required number of copies of Form 13A, which he is required to send by registered mail to or serve personally upon the owners of property in the area deemed by the Board to be affected by the application.

The case is called at 3 P. M. on the Tuesday set for the Call of the Clerk's Calendar and appearances are noted for or against the application. Those appearing in opposition are required to file typewritten objections duly verified. The case is then set down for a definite date for public hearing before the Board of Appeals. This date has to be at least two weeks after the call of the calendar in order to allow time for advertising.

The papers in the case, on and after the day following the call of the calendar, are open to inspection by the applicant or by objectors.

The application is advertised in the Bulletin of the Board of Standards and Appeals in the issue for the week following the call of the case.

PUBLIC HEARING.—At the time set for the public hearing the applicant states his case, those appearing in favor of the application and the objectors are heard, and the board decides the application under Rule 19-a, Rules of Procedure, adopted by the Board of Standards and Appeals, January 18, 1917, as follows:

Rule 19-a.—The final disposition of every appeal under §719 of the charter, every appeal under the building zone resolution and every petition under §718-a, subdivision 4, of the charter shall be in the form of a resolution either to grant or dismiss such appeal or petition. If a resolution to grant such an appeal or petition fails to receive the requisite number of votes for adoption, the action will be deemed equivalent to a denial, and a resolution denying such appeal or petition shall be formally entered upon the record. If a resolution to dismiss such an appeal or petition fails to receive the requisite number of votes for adoption, the appeal or petition shall remain on the calendar until disposed of by an action on a resolution to grant such appeal or petition.

In framing the resolution the Board is guided by a resolution adopted June 26, 1917, as follows:

Resolved, that, so far as it may be applicable, a condition be attached to each resolution granting an appeal under the building zone resolution, requiring that the necessary permits for the work contemplated by the appeal be secured within nine months of the date of the action of the Board of Appeals in granting the appeal, and that the building or alteration, as the case may be, shall be completed within eighteen months of the date of the action granting the appeal.

DECISIONS, RESOLUTIONS AND OPINIONS AFFECTING APPLICATIONS

GARAGES IN RESTRICTED DISTRICTS

In cases where consents of owners of affected property are required under §7, 'g, Building Zone Resolution, the board is guided by a resolution adopted January 29, 1918, as follows:

WHEREAS, the building zone resolution, section 7, paragraph g, authorizes the Board of Appeals to permit the erection of garages in restricted districts, provided "consents duly acknowledged by the owners of 80 per cent. of the frontage deemed by the board to be immediately affected" are filed; and

WHEREAS, delay in the consideration of such appeals may perhaps be avoided if appellants could know beforehand what premises are deemed to be immediately affected;

Resolved, that unless otherwise directed by the Board of Appeals, the frontage immediately affected shall be deemed to be

(a) every frontage, in a business or residence district, on the same side of the street or streets upon which the proposed garage shall have a frontage, entrance or exit, in either direction, within a distance of 400 feet from the frontage, entrance or exit up to such intersecting street, and, in any case, within 200 feet from the frontage, entrance or exit, of such garage;

(b) every frontage, in a business or residence district, directly opposite the frontage specified in paragraph (a), including every frontage opposite the frontage, entrance or exit of the proposed garage; and

(c) every frontage, in a business or residence district, of property, any part of which is within fifty feet of the rear or any side of the lot or plot on which the proposed garage is located, and which is not already included under paragraphs (a) and (b);

provided that the Board of Appeals may require consents of such additional frontage as it deems to be affected; and

Resolved, that the filing of such consents shall in no wise prejudice the action of the Board of Appeals in amending the frontage deemed affected or in declining to grant an appeal under the provisions of the building zone resolution; and

Resolved, that separate consents shall be secured from each and every owner (in the case of a corporation, from the president or secretary of the corporation, or in the case of an estate or trust, from a qualified executor or administrator of such estate or a qualified trustee of such trust); that each such consent shall show clearly the authority of the person executing the same; that each such consent shall describe the premises for which the consent is granted and state the exact frontage represented thereby; and that each consent shall indicate that

the person executing the same understands fully the purpose of the consent and is informed of the size, character and use of the building for the erection of which permission is sought;

Resolved, that such consents shall be filed with the Board of Appeals at least one week in advance of the public hearing on the appeal; and

Resolved, that with such consents and at the time of filing the same there shall be submitted to the Board of Appeals eight copies of a diagram or diagrams, drawn to scale, on sheets eight by ten and a half inches in size, showing the location of the proposed garage, of the lot or plot on which it is located and of each and every lot or plot the frontage of which is deemed to be affected and giving the frontage by feet and fractions thereof and the names of the owners whose consents are filed.

(The effect of these requirements as applied to several typical cases is shown in the diagram on page 164, the shaded frontages indicating in each case the consents required.)

GARAGES EXISTING JULY 25, 1916

On June 5, 1917, in granting an appeal under Cal. No. 616-17, the Board of Appeals—

Resolved, further, that when satisfactory evidence is submitted to the fire commissioner that a building has been used as a garage previous to July 25, 1916, and that the failure to obtain the permit required by §150, Chapter 10, Code of Ordinances, is due to ignorance and not to indifference or negligence, a building shall, under and within the provisions of the building zone resolution, be deemed to have been used as a garage, and its continuance shall be permitted accordingly.

MOTOR VEHICLE REPAIR SHOPS

On September 11, 1917, in granting an appeal under Cal. No. 1106-17, the Board of Appeals incorporated a general resolution that when satisfactory evidence is submitted to the fire commissioner that a building has been used as a motor vehicle repair shop previous to July 25, 1916, and that the failure to obtain the permit required by §150, Chapter 10, Code of Ordinances, is due to ignorance, and not to indifference or negligence, a building shall, under and within the provisions of the building zone resolution, be deemed to have been used as a motor vehicle repair shop, and its continuance shall be permitted accordingly.

LAUNDRIES IN BUSINESS DISTRICTS

On May 28, 1917, the Board of Appeals, in granting an appeal (Cal. No. 549-17) adopted a resolution declaring that a laundry is not a prohibited use in a business district under the Building Zone Resolution.

AFFIDAVITS AS TO USE

Every applicant for a permit for the reconstruction or alteration of any building under §6 of the building zone resolution, shall submit with his application an affidavit setting forth the use of the building in question at the time of the passage of the building zone resolution and further setting forth any and every change in use which has been made since the adoption of the said resolution.

THE BENEDICT DECISION

The opinion of Mr. Justice Benedict, reversing the action of the Board of Appeals in granting permission to erect a riding academy and stable on the east side of Franklin and Washington avenues (where they converge) extending from Malbone street to Sterling street, Brooklyn, decides several points of importance in the handling of appeals under the building zone law, of which the following are of immediate interest:

In order that it may be entertained, an appeal under the building zone resolution must be brought before the Board of Appeals in the same manner as any other appeal, that is, an appeal from a decision or determination of the fire commissioner, or of a superintendent of buildings. It is pointed out, that under Chapter 503, Laws of 1916, each superintendent of buildings has exclusive jurisdiction within his borough to require that the construction and alteration of all buildings shall conform to such provisions of law or ordinance, including the building zone resolution, as may be applicable. Hereafter, therefore, when an exception, under the building zone resolution, is desired, an application to construct or alter, or for a change of occupancy, must first be submitted to the superintendent of buildings and, in case his decision is adverse, an appeal may be taken to the Board of Appeals.

A second point of interest is the definition of the word "block" as used in the building zone resolution. The Court sustains the interpretation given by the Board of Appeals, namely, that a "block" is that portion of any so-called "square block" (the territory bounded and enclosed by three or more streets) "fronting on a street between two intersecting streets."

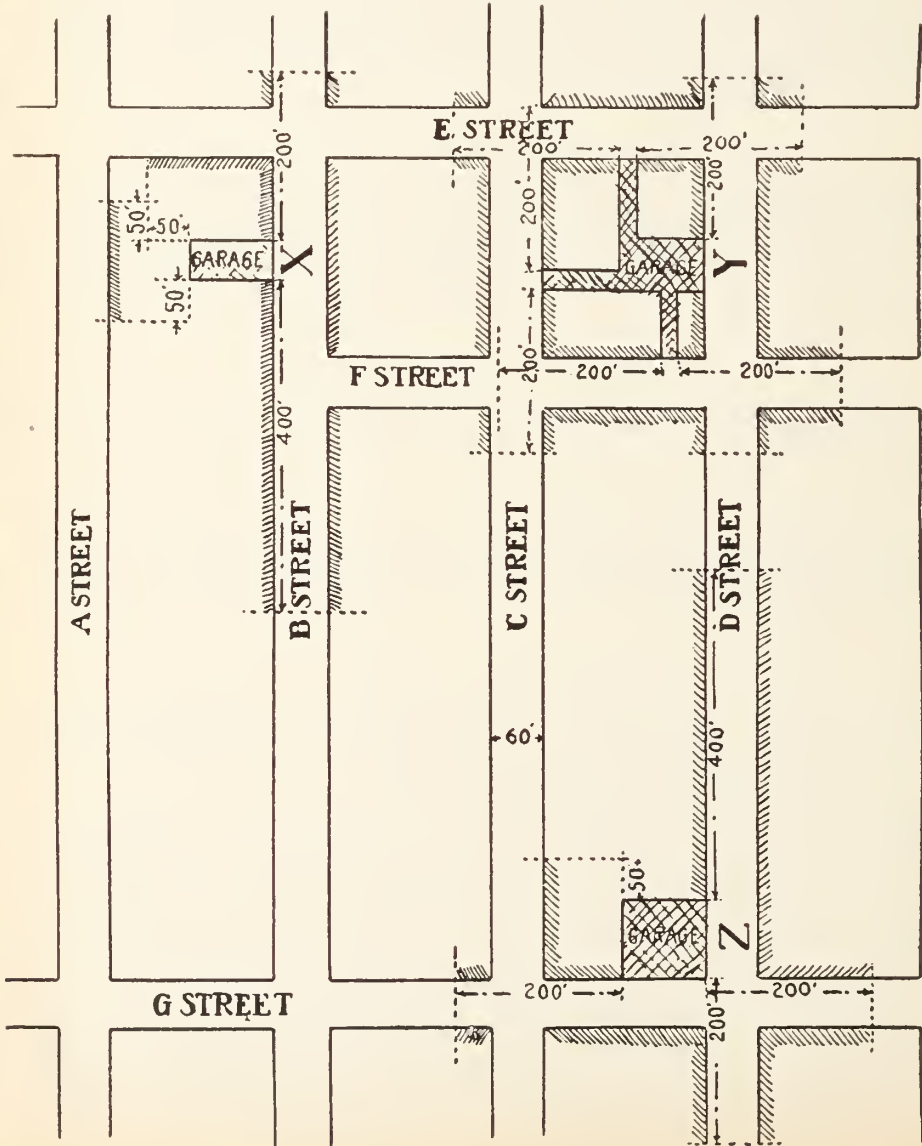
The question as to whether a building is located on a certain block is determined by the Court when it holds that the building "is not to be deemed in any particular 'portion or block'"

within the meaning of sub-division e (building zone resolution) unless there be a public entrance thereto within such 'portion or block.'" It could, it would seem, be held conversely, that if a building has a public entrance on any street, it must be considered as located on a block of that street and must, therefore, be affected by any provisions or limitations placed on that block by law or ordinance.

SKY SIGNS

According to an opinion of the corporation counsel, roof signs are subject to the height and set-back restrictions of the building zone resolution. The provisions of article 16, of chapter 23 of the code of ordinances, which relate to the height of roof signs, have been superseded by the provisions of the building zone resolution.

In the Bulletin, issue of October 11, attention was called to an opinion of the corporation counsel, according to which roof signs are subject to the height and set-back restrictions of the building zone resolution. It was stated that the provisions of article 16, of chapter 23 of the code of ordinances, which relate to the height of roof signs, have been superseded by



the provisions of the building zone resolution. This holds true only in so far as the code of ordinances conflicts with the provisions of the building zone resolution. The provisions of article 16, of chapter 23, of the code of ordinances, are still effective in all cases where there is no conflict with the provisions of the building zone resolution.

WIDTH OF COURTS

In an opinion by the corporation counsel to the borough president of Manhattan as to the effect of Sec. 19 of the building zone resolution on the provisions of Sec. 135 of the building code relating to the width of courts, it is held that "by Sec. 19 of the building zone resolution, the provision of the said resolution or of the building code which requires the wider outer court controls."

FORMS IN USE BY BOARD OF APPEALS CITY OF NEW YORK

NOTICE OF IMPROPER WORDING OF APPEAL

Dear Sir:

The enclosed communication, received from you, not being in proper form, is herewith returned, together with an application blank, which must be properly filled out and accompanied by all the information stated therein.

This should be filed, in person, or by representative, in Room 914, Municipal Building, and upon filing same, you will be given a Calendar Number, and advised of the date of the Calendar Call.

Respectfully,

Chairman.

APPEAL PLACED ON CALENDAR

Sir:

Your appeal, under the building zone resolution, in re premises has been given Cal. No.

Enclosed herewith is a copy of a form letter, of which you must make the necessary copies, and then send one to each of the adjoining and neighboring property owners as per list furnished by you in filing your papers, and *within three days*, you must file in this office a verified statement that you have served by registered mail a copy of this notice on each of such owners.

Further, the calendar will be called on Tuesday next, ..., at 3 p. m., in Room 919, Municipal Building, and you must be present, either in person, or by agent, or attorney, and you will then be advised as to the date set positively for the hearing on the merits of your application.

Respectfully,

Chairman.

Form 13A

NOTICE BY APPLICANT TO ADJOINING OWNER

PLEASE TAKE NOTICE:

That an application has been made by for permission to erect a garage on the premises, and this notice is sent to you as an owner of property on the block affected by the application. This application is now No. on the *Clerk's Calendar*, which will be called on Tuesday next, ..., at 3 p. m., sharp, in Room 919, Municipal Building; and when the calendar is called, you may appear either in person, or by agent, or your attorney, and present any typewritten objections which you might have to the granting of this permission.

You will then be informed what day will be fixed for the hearing and discussion of the merits of the application. No objections will be considered at the hearing which have not been presented in writing when the calendar is called on Tuesday next at three o'clock.

This notice is sent to you by the applicant, by order of the Chairman of the Board of Appeals.

Respectfully,

. *Applicant.*

Form 14A.

BOARD OF APPEALS
CITY OF NEW YORK
MUNICIPAL BUILDING

NOTICE:—This APPLICATION must be TYPEWRITTEN and accompanied by drawings.

CAL. No. 191

Filed. 191

APPLICATION FOR MODIFICATION OF BUILDING ZONE RESOLUTION

PREMISES AFFECTED is situate on the side of
distant feet of the corner by the intersection of
and and known as Number
Borough of

TO THE CHAIRMAN, BOARD OF APPEALS:

Application is hereby made for a modification of the requirements of Section
BUILDING ZONE RESOLUTION, to permit:

The application is based on Section , BUILDING ZONE RESOLUTION, and the
decision of the
{ Superintendent of Buildings } , dated 191 , which is appealed from, reads:
{ Fire Commissioner }

Such decision was rendered in connection with { N. B. of 191
(If in form or order give number.) ALT.

DESCRIPTION OF { PROPOSED } BUILDING.
EXISTING

- (1.) SIZE OF BUILDING: Area in square feet:
At street level: feet front. feet deep.
At typical floor level: feet front. feet deep.
Height: stories. feet.
- (2.) OCCUPANCY: (of each floor.)
- (3.) BUILDING ZONE DISTRICT:
- (4.) CHARACTER OF CONSTRUCTION: Frame: Non-fireproof: Fireproof:

IF WORK CONSTITUTES AN ALTERATION OR EXTENSION TO AN EXISTING
BUILDING, DESCRIBE BRIEFLY.

ATTACHED HERETO AND MADE A PART OF THIS APPLICATION, I SUBMIT
THE FOLLOWING:

- (a.) Copy of notice to the { Superintendent of Buildings } that I have appealed.
Fire Commissioner
- (b.) Seven sets of drawings, all on sheets 8 inches by 10½ inches in size, including:
A block diagram with street numbers, showing the character and occupancy of all
property on both sides of street, between the two intersecting streets.
A ground and typical floor plan with all necessary measurements.
A longitudinal section with heights marked thereon.
- (c.) A full list of names and addresses of owners of all property shown on block diagram,
and indicating property owned.
- (d.) Consents, if any, given by such property owners.
- (e.) At least two sets of unmounted photographs, 8 inches by 10½ inches in size, showing
the actual conditions on both sides of street, between intersecting streets.
- (f.) A TYPEWRITTEN statement of the principal points on which I base my application.

NAMES AND ADDRESSES.

Owner:

Lessee:

Applicant:

Sworn to before me, this. }
day of. 191. }

(Sign here.)

NOTE:—If applicant is neither owner or lessee, letter of authorization must be filed.

SET FOR CALENDAR CALL. 191 POSTCARD NOTIFICATION SENT. 191

DISPOSITION. 191 RESOLUTION SENT. 191

Form 15A

BOARD OF APPEALS
CITY OF NEW YORK
MUNICIPAL BUILDING

NOTICE:—This APPEAL must be TYPEWRITTEN and accompanied by drawings.

CAL. No. Filed. 191

APPEAL FROM DECISION OF { SUPERINTENDENT OF BUILDINGS
FIRE COMMISSIONER

PREMISES AFFECTED is situate on the side of
distant feet of the corner formed by the intersection of
and and known as Number
Borough of

TO THE CHAIRMAN, BOARD OF APPEALS:

I HEREBY APPEAL from a decision of the { Superintendent of Buildings
Fire Commissioner }, dated
..... 191 , which recites as follows: (give exact language.)
.....

Such decision was rendered in connection with { N. B.
ALT. of 191

(If in form of order or violation give number.)

DESCRIPTION OF { PROPOSED
EXISTING } BUILDING.

- (1.) SIZE OF BUILDING: Area in square feet:
At street level: feet front. feet deep.
At typical floor level: feet front. feet deep.
Height: stories. feet.
(2.) OCCUPANCY: (of each floor.)
.....

- (3.) BUILDING ZONE DISTRICT:
(4.) CHARACTER OF CONSTRUCTION: Frame: Non-fireproof: Fireproof:

IF WORK CONSTITUTES AN ALTERATION OR EXTENSION TO AN EXISTING
BUILDING, DESCRIBE BRIEFLY.
.....

ATTACHED HERETO AND MADE A PART OF THIS APPEAL, I SUBMIT THE
FOLLOWING:

- (a.) Copy of notice to the { Superintendent of Buildings
Fire Commissioner } that I have appealed.
(b.) Seven sets of drawings of the building, with dimensions, all on sheets 8 inches by 10½
inches in size, illustrating clearly the points at issue.
(c.) A TYPEWRITTEN statement of the principal points on which I base my appeal.

NAMES AND ADDRESSES.

Owner:

Lessee:

Applicant:

Sworn to before me, this..... }
day of..... 191.. } (Sign here.)
.....

NOTE:—If applicant is neither owner or lessee, letter of authorization must be filed.

SET FOR CALENDAR CALL..... 191 POSTCARD NOTIFICATION SENT..... 191

DISPOSITION..... 191 RESOLUTION SENT..... 191

BOARD OF STANDARDS AND APPEALS

RULES OF PROCEDURE

ARTICLE I.—MEETINGS

1. Regular meetings of the Board of Standards and Appeals shall be held on Tuesday of each week at 10 A. M. Regular meetings of the Board of Appeals shall be held on Tuesday of each week at 1.30 P. M.

2. Special meetings may be called by the chairman, or at the request of five members, of whom at least two must be appointed members, provided that notice of the same has been mailed to each member at least twenty-four hours before the time set, except that the announcement of a special meeting at any meeting at which a quorum is present shall be sufficient notice of such meeting.

3. All meetings shall be open to the public.

4. A quorum of the Board of Standards and Appeals shall consist of eight members, of whom at least three must be appointed members, and the quorum of the Board of Appeals shall consist of five members.

5. The members of the board shall attend the meetings in person, except that during absence or disability, an ex-officio member may be represented by a subordinate official authorized by law to act for him in such cases as follows:

The Fire Commissioner by the Deputy Commissioner designated by him in accordance with Section 720 of the Charter;

The Chief of the Uniformed Force by the Acting Chief;

A Superintendent of Buildings by a Chief Inspector as provided in Section 406 of the Charter.

The names of such substitutes shall have been previously filed with the chairman.

ARTICLE II.—CASES BEFORE THE BOARD

1. Every *application* under the Building Zone Resolution, every *appeal* under Section 719 of the Charter and every *petition* under 718-a, subdivision 4. of the Charter, shall be made to the proper board on the forms hereinafter provided, and shall include the data required in such forms, so as to supply all the information necessary for a clear understanding and intelligent action by the respective board. Action in each case must be based largely on the information so furnished. The statements made by the applicant, appellant or petitioner, or the conditions of the approval by either board, will be incorporated in the resolution granting the approval. Officials who are charged with the enforcement of the laws, ordinances and rules relating to buildings in the City of New York will be guided by such approvals, and before granting permit or taking any other affirmative action, should see that there are no misstatements as to facts and that the conditions of the approval are observed. Any administrative official discovering any misstatement of essential information is requested to notify the board, in order that it may rescind the approval. All approvals will remain valid only so long as the information and the conditions on which approval was based are maintained.

2. Any communication purporting to be an application, appeal or petition shall be regarded as a mere notice of intention to seek relief until it is made in the form required.

3. Upon receipt of any such communication the writer shall be supplied with the proper forms for presenting his application, appeal or petition, and if he fails to supply the required data *within twenty days*, his case may be dismissed for lack of prosecution.

ARTICLE III.—THE CALENDAR

1. Each case filed in the proper form, with the required data, shall be numbered serially, regardless of whether it be an application, appeal or petition, and shall be placed on the Clerk's Calendar. The calendar numbers shall begin anew on January 1st of each year, and shall be hyphenated with the number of the year and the initials indicating the character of the case. Thus the calendar number of an application under the Building Zone Resolution in 1918 shall be "210-18-BZ"; an appeal from any order, requirement, decision or determination of a Superintendent of Buildings or of the Fire Commissioner, "211-18-A" and a petition for a variation of the Labor Law or of any rule or standard adopted thereunder, "212-18-S."

2. So soon as a case receives a calendar number, it shall be put on the Clerk's Calendar, and the applicant, appellant or petitioner shall be notified of the date when his case will be reached in the call of the Clerk's Calendar.

3. The Clerk's Calendar shall be called each Tuesday at 3 P. M. in Room 919, Municipal Building, Manhattan, by the Chairman or the Secretary, and a date for the public hearing on each case shall then be set, which shall be full and sufficient notice to all persons interested in such case.

4. Thereafter each case shall be listed by calendar number and premises in the Trial Calendar printed in The BULLETIN of the Board of Standards and Appeals, under the title of the appropriate board and the date for which such case has been set.

ARTICLE IV.—FINAL DISPOSITION OF CASES

1. Every decision of either board on any case shall be by resolution.

2. The final disposition of any application, appeal or petition shall be in the form of a resolution either to grant or to dismiss. If a resolution to grant fails to receive five affirmative votes in the Board of Appeals or eight affirmative votes in the Board of Standards and Appeals, the action will be deemed equivalent to a denial, and a resolution denying such application, appeal or petition shall be formally entered on the record. If a resolution to dismiss fails to receive five affirmative votes in the Board of Appeals or eight affirmative votes in the Board of Standards and Appeals, the case shall remain on the calendar until disposed of by action on a resolution to grant, but at any subsequent meeting of the board a motion to dismiss may be acted upon.

3. Any applicant, appellant or petitioner may withdraw his application, appeal or petition at any time prior to action thereon, with the consent of the board, but if a motion has been made, and is pending, either to grant or to dismiss, such motion shall have precedence.

4. No application, appeal or petition dismissed or denied can be considered again except (1) on a motion to reconsider the vote, or (2) on a request for a rehearing.

5. No motion to reconsider can be entertained unless it is made by a member of the board who voted against the application, appeal or petition. If such motion to reconsider receives five affirmative votes if it is before the Board of Appeals, or eight affirmative votes if it is before the Board of Standards and Appeals, the Board may vote on the motion to grant, provided that on an application under the Building Zone Resolution the case must be put on the calendar for a public hearing at least fourteen days after the date of such decision to reconsider the vote, and the property owners must be notified by the applicant, who must file proof of such notice within three days after the adoption of the motion to reconsider.

6. No request to grant a rehearing can be entertained unless new evidence is submitted which could not be presented at the previous hearing. If, on motion of a member of the board, adopted by five affirmative in the Board of Appeals or by eight affirmative votes in the Board of Standards and Appeals, the request for a rehearing is granted, the case shall be put on the calendar for a rehearing on a specified date, provided that in case of an application under the Building Zone Resolution the date set for the public hearing must be at least fourteen days after the date of the adoption of the motion to grant a rehearing, and the property owners must be notified by the applicant, who must file proof of such notice.

7. Either board may, on the motion of any member, review any decision that it has made, and may reverse or modify such decision, but no such review shall prejudice the rights of any person who has in good faith acted thereon before it is reversed or modified.

ARTICLE V.—BUILDING ZONE APPLICATIONS

1. No application for a variation or modification of the provisions of the Building Zone Resolution shall be entertained by the Board of Appeals except in a specific case, and from an order, requirement, decision or determination made by any Superintendent of Buildings or the Fire Commissioner on the ground that the proposed plan or use is contrary to the Building Zone Resolution.

2. No such application shall be entertained unless the application is filed within three months from the date of the action of the Superintendent of Buildings, or of the Fire Commissioner.

3. Every application shall be made on Form 14A and shall be accompanied by all the data required by such form, and shall be considered subject to such rules as the Board of Standards and Appeals has adopted, or may adopt, under Article 5, Section 20, of the Building Zone Resolution.

4. So soon as any application is completed by the filing of the data required in Form 14A the case shall receive a calendar number and shall be placed on the Clerk's Calendar, and the applicant shall be notified on Form 12A of the time set for the call of the calendar, which shall be at least five days after the mailing of said notice. With this notice the applicant shall be supplied with an official copy of Form 13A, which he is required to send to each of the

property owners entitled to notice of the application. Within three days the applicant must file a verified statement that he has so notified each of such property owners either by personal service or by registered mail.

5. On the call of the Clerk's Calendar the applicant shall appear in person, or by agent, or attorney, and property owners affected by the application may appear either in person or by agent or attorney, and present any typewritten objections they may have to the granting of the application. Then a date shall be set by the official who calls the calendar for a public hearing on the application, the date to be at least fourteen days thereafter, so as to permit advertisement of the application in the BULLETIN of the board.

6. On the date set for the public hearing the applicant shall state his case, then the opposition shall be heard and the applicant shall have opportunity to reply.

7. No application that has been dismissed or denied can be entertained in a case in which the applicant, by the filing of new plans, has obtained a new decision from the Superintendent of Buildings, unless the new plans materially change the aspects of the case.

ARTICLE VI.—APPEALS

1. No appeal from any order, requirement, decision or determination of a Superintendent of Buildings or the Fire Commissioner, or from any rule or regulation relating to the construction, alteration, structural changes in, equipment, occupancy or use of any building or structure, under Section 719 of the Charter, shall be entertained unless such appeal is filed on Form 15A, with all the data required in such form, *within thirty days* from the date of the order appealed from in the case of an order of a Superintendent of Buildings, and *within twenty days* from the date of the order appealed from in case of an order of the Fire Commissioner.

ARTICLE VII.—PETITIONS

1. No petition for variation of the labor law, or of any rule adopted thereunder, affecting the construction or alteration of buildings, exits therefrom, the installation of fixtures or apparatus as authorized by Section 718-a, subdivision 4 of the Charter, shall be entertained unless it is made on Form 16S, with all the data required in such form, *within thirty days* from the date of the administrative order to which the petition refers.

ARTICLE VIII.—ADOPTION OF RULES

1. No resolution of the Board of Standards and Appeals adopting or amending any rule or regulation under subdivisions 2 or 3 of section 718-a of the Charter shall be adopted until a public hearing, after at least ten days' notice by publication in The BULLETIN of the board, has been held on such proposed rules or regulation. Eight affirmative votes of the board shall be necessary for the adoption of such resolution.

2. Amendments to these Rules of Procedure may be made by the Board of Standards and Appeals at any regular meeting, provided notice of such amendment has been given to each member of the board three days prior to such meeting, either in writing or by publication in The BULLETIN. The suspension of any rule of procedure may be ordered at any meeting by unanimous vote.

ARTICLE IX.—OTHER RESOLUTIONS

1. Every resolution of the Board of Standards and Appeals suggesting changes or amendments to the law under subdivision 5, section 718-a of the Charter, shall require at least eight affirmative votes for its adoption.

2. Every resolution not otherwise provided for, ordinary motions, or decisions on rules of order, shall require in the case of the Board of Standards and Appeals, seven affirmative votes, and in the case of the Board of Appeals, four affirmative votes.

ARTICLE X.—INSPECTIONS

1. In any case in which the Board of Appeals may deem it necessary, an inspection of the premises in question may be ordered by the board. Such inspection shall be made by the chairman and by two or more members designated by him, and they shall report their findings to the board in writing.

ARTICLE XI.—TESTS

1. In any case in which the Board of Standards and Appeals may order a test of any material or device, the test shall be conducted under the supervision of an assistant engineer,

in the presence of the chairman and two or more members appointed by him, and the result of such test shall be reported to the board in writing, and the material or device shall not have the approval of the board unless the report be favorable and be adopted by at least eight affirmative votes.

ARTICLE XII.—RECORDS

1. All applications, appeals and petitions shall be on the required forms, and all communications, reports, etc., and plans, relative to any matter appearing on the calendar, shall be on sheets approximately 8 in. by 10½ in. in size. After final disposition, they shall be bound in some suitable manner. These records shall be kept in filing cabinets in their numerical order, in such a manner that they are accessible to the public at all reasonable hours.

2. An index indicating locations by boroughs shall be kept.

3. All reports on matters coming before either board for action shall be duplicated in sufficient numbers to furnish a copy to each member. The original shall be filed with the record in each case.

ARTICLE XIII.—THE BULLETIN

1. The BULLETIN of the Board of Standards and Appeals shall be published on Tuesday of each week. It shall contain:

(1) Directory of the Board.

(2) The Trial Calendar.

(3) Notice of hearings on Building Zone applications and on proposed rules or the amendment of rules.

(4) An abstract of the minutes of each meeting, including a brief statement of the action in each case, with the roll call thereon and the full text of the resolution adopted.

(5) The text of resolutions adopted but not hitherto published.

(6) Rules adopted.

(7) Such other information as may be of value to the public and within the scope of the work of either board.

ARTICLE XIV.—OFFICERS

1. The chairman shall preside at meetings. Once in each year, at the first meeting in June, the board shall elect one of the appointed members as vice-chairman, to preside at meetings during the absence or disability of the chairman.

2. The chairman, subject to these rules, shall decide all points of order or procedure, unless otherwise directed by a majority of the board in session at that time.

3. The chairman shall designate the members of the board of appeals to make an inspection, and, unless otherwise directed by a majority of the board having jurisdiction, shall appoint any committee that may be found necessary.

4. The chairman shall report at each meeting on all official transactions that do not otherwise come to the attention of the board.

5. The chairman shall, subject to these rules and further instructions from the board, transact all official business of both boards, engage the necessary employes, direct their work and exercise general disciplinary powers.

6. Subject to these rules and the direction of the chairman, the secretary shall conduct all official correspondence, compile the required records, edit The BULLETIN, maintain the necessary files and indices, and generally supervise the clerical work of the board.

7. Subject to these rules and the direction of the chairman, the assistant engineers shall examine and report on all applications, appeals and petitions; prepare all proposed rules or revised rules suggested by outside agencies, with reports on the reasons and necessities for same; supervise and witness the tests conducted under the auspices of the board; and assist generally in all technical matters coming before the board.

8. The clerical employes, including clerks, stenographers, copyists, messengers and others that may be added at any time, shall be subject to the immediate direction and supervision of the secretary.

9. The chief clerk shall do the necessary bookkeeping and keeping of accounts, keep the files and notices in proper order and up to date, assisting in editing The BULLETIN, and generally assist the secretary. During the absence or disability of the secretary, the chief clerk shall act in that capacity.

10. The chief stenographer shall attend the meetings and make a complete record of the transactions for the files, including verbatim reports of such parts as may be directed, and shall prepare, after each meeting and in time for the next publication of The BULLETIN, the abstract of the minutes which is to appear in such BULLETIN.

Form 16S

BOARD OF STANDARDS AND APPEALS
CITY OF NEW YORK
MUNICIPAL BUILDING

NOTICE:—This PETITION must be TYPEWRITTEN and accompanied by drawings.

CAL. No. 191

Filed.....191

PETITION FOR LABOR LAW VARIATION

PREMISES AFFECTED is situate on the _____ side of
distant _____ feet _____ of the corner formed by the intersection of
and _____ and known as Number _____
Borough of _____

TO THE CHAIRMAN, BOARD OF STANDARDS AND APPEALS:

I HEREBY PETITION for a variation of the requirements of Section _____ Labor Law—
Rule _____ to be relieved of (state requirement)
as called for by order No. _____ of the { Superintendent of Buildings } , a copy of which is
Fire Commissioner } annexed hereto.

DESCRIPTION OF { PROPOSED } BUILDING
{ EXISTING }

GENERAL. (Fill out in all cases.)

- (1.) SIZE OF BUILDING: Area in square feet:
At street level: _____ feet front. _____ feet deep.
At typical floor level: _____ feet front. _____ feet deep.
Height: _____ stories. _____ feet.
(2.) OCCUPANCY (of each floor). Give use and maximum number of occupants.
(3.) CHARACTER OF CONSTRUCTION: Frame: _____ Non-fireproof: _____ Fireproof: _____
(4.) IS THERE A SPRINKLER SYSTEM? _____ A FIRE ALARM SIGNAL SYSTEM? _____
Describe briefly: _____

FILL OUT IF ORDER AFFECTS EXITS.

- (5.) NUMBER OF INTERIOR STAIRS OR FIRE TOWERS:
Location: _____
Do stairs lead to roof? _____ Do stairs lead to street? _____
Clear width of stairs: _____ Area of hall space per story: _____ square feet.
Stair construction: _____
Construction of stair enclosure: _____
Construction of stair doors: _____
(6.) NUMBER OF EXTERIOR STAIRS OR FIRE ESCAPES:
Location: _____
Extension to roof: _____ To street: _____
(Describe briefly.) _____
Means of reaching street if located on side or rear: _____
How are openings along course of fire escape protected? _____
(7.) GIVE RELATIVE HEIGHTS OF ROOFS ON ADJOINING BUILDINGS: _____

FILL OUT FOR BAKERIES.

- (8.) CLEAR HEIGHT, FLOOR TO CEILING:
Is ceiling above or below curb? _____ How much?
Is floor above or below rear or side court? _____ How much?
Describe means of ventilation. _____

FILL OUT FOR BARRED WINDOWS.

- (9.) NUMBER OF WINDOWS AFFECTED:
Location: _____
Means of egress from story affected: _____

ATTACHED HERETO AND MADE A PART OF THIS PETITION, I SUBMIT THE FOLLOWING:

- (a) Thirteen sets of drawings of the building with dimensions, all on sheets 8 inches by 10½ inches in size, illustrating clearly the points at issue.
(b) A TYPEWRITTEN statement of the principal points on which I base my petition.

NAMES AND ADDRESSES.

Owner:

Lessee:

Petitioner:

Sworn to before me, this.....
day of.....191

(Sign here.)

NOTE:—If petitioner is neither owner or lessee of property, letter of authorization must be filed.

SET FOR CALENDAR CALL.....191 POST CARD NOTIFICATION SENT.....191
DISPOSITION.....191 RESOLUTION SENT.....191

RULES FOR INTERIOR FIRE ALARM SYSTEM

ADOPTED BY THE BOARD OF STANDARDS AND APPEALS, SEPTEMBER 27, 1917, AS

Effective October 31, 1917

AMENDED DECEMBER 6, 1917, AND FEBRUARY 7, 1918

RULE 1. SENDING STATIONS.—Except as hereinafter otherwise provided, there shall be at least one fire alarm sending station in each story of any building requiring a manual fire alarm signal system, located in a natural path of escape from fire at a readily accessible point designated by the fire commissioner, which always shall be kept clear. Additional sending stations shall be installed so that no point on any floor shall be more than one hundred feet distant from the nearest sending station in that story. Such stations shall be so located and constructed that whoever discovers a fire can cause an alarm to be sounded immediately by operating the station.

In factory buildings, as defined in the labor law, not exceeding five stories in height and 2,500 square feet in area in any story above the first in which not more than fifty persons are employed at any time above the first story and in which closed circuit fire alarm systems are installed, the number of sending stations may be reduced with the approval of the fire commissioner when the occupancy is not especially hazardous and the arrangement of exit facilities is such as to permit the alarm box or boxes to be located in the main exit path from the building.

RULE 2. SIGNALING DEVICES.—There shall be installed in each story of any building requiring a manual fire alarm signal system one or more signaling or alarm devices placed at accessible points, with the lowest part at least eight feet above the floor where practicable. They shall not be placed on the exterior of a building except by special written permission of the fire commissioner.

Such devices may consist of bells, gongs, whistles, or horns, or other approved devices, and shall be of the same type throughout any one installation. Permission may be granted to install special signaling devices in a particular section of a factory plant differing from the devices in other sections, where necessary for audibility and effectiveness.

RULE 3. CLASSIFICATION.—For the purpose of the fire alarm rules, interior manual fire alarm signal systems shall be classified with respect to operation and use, as: mechanical systems, non-coded closed circuit systems and coded closed circuit systems.

RULE 4. MECHANICAL SYSTEMS.—Mechanical fire alarm signal systems are systems consisting of signaling devices, operated mechanically, automatically, manually or by open electric circuits. When mechanically operated, the mechanism shall be enclosed in substantial cabinets; shall be of metal thoroughly protected against corrosion and injury and all mechanical parts shall be designed to have a factor of safety of not less than ten, based upon the maximum stress to which any part of the mechanism may be subjected. When pull wires or chains are used, they shall be enclosed in rigid conduits, and all pulleys, springs, cranks, expansion joints, and other vital parts of the system shall be placed in readily accessible positions for inspection. The pull required at any sending station to operate the system shall not exceed twenty-five pounds.

RULE 5. NON-CODED CLOSED CIRCUIT SYSTEMS.—Non-coded closed circuit fire alarm signal systems are systems consisting of sending stations and signaling devices, operated on supervised closed electric circuits which send continuous or non-coded signals.

When such systems are installed in buildings, the signaling devices shall be capable of giving a signal consisting of not less than forty taps or blows, or an alarm of at least four minutes' duration, either continuous or intermittent, for one to one-and-a-half seconds, at intervals of not less than one-half nor more than one second.

RULE 6. CODED CLOSED CIRCUIT SYSTEMS.—Coded closed circuit fire alarm signal systems are systems consisting of sending stations and signaling devices, operated on supervised closed electric circuits, which send rounds of coded signals to indicate the floor or portion of the same from which the alarm was sent.

When coded systems are installed in buildings, the code numbers to be used shall be designated by the fire commissioner and shall be sounded at least four times for each operation of an alarm box.

RULE 7. FIVE-STORY FACTORIES.—In factory buildings, as defined in the labor law, not exceeding five stories in height nor 2,500 square feet in area in any story above the first, occupied by not more than one tenant, in which not more than one hundred persons are employed at any time above the first story, or occupied as a tenant factory in which not more than fifty persons are employed at any time above the first story, the fire commissioner shall accept either mechanical, non-coded closed circuit or coded closed circuit fire alarm signal systems. (Amended February 7, 1918.)

RULE 8. SIX-STORY FACTORIES.—In non-fireproof factory buildings, as defined in the labor law, not exceeding six stories in height nor 5,000 square feet in area in any story above the first, occupied by not more than one tenant, in which not more than one hundred and fifty persons are employed at any time above the first story, or occupied as a tenant factory in which not more than one hundred persons are employed at any time above the first story, the fire commissioner shall accept either non-coded or coded closed circuit fire alarm signal systems.

In non-fireproof factory buildings, as defined in the labor law, exceeding six stories in height or 5,000 square feet in area in any story above the first, the fire commissioner shall accept coded closed circuit fire alarm signal systems.

RULE 9. EIGHT-STORY FACTORIES.—In fireproof factory buildings, as defined in the labor law, not exceeding eight stories in height nor 5,000 square feet in area in any story above the first, in which not more than one hundred and fifty persons are employed at any time above the first story, the fire commissioner shall accept either non-coded or coded closed circuit fire alarm signal systems.

In fireproof factory buildings, as defined in the labor law, exceeding eight stories in height or 5,000 square feet in area in any story above the first, the fire commissioner shall accept coded closed circuit fire alarm systems.

RULE 10. SUB-DIVIDED BUILDINGS.—Where a building is sub-divided by fire walls, each section shall be deemed a separate building for the purpose of fire alarm signal system installations. One control board may be used, if so arranged as to operate the signaling devices in each section of the building independently.

RULE 11. MIXED OCCUPANCY.—In buildings requiring fire alarm signal systems, of which parts are occupied by other than factory tenants, and in which the conditions of construction and occupancy warrant the establishment of a local fire brigade, the fire commissioner shall accept dual operation systems.

When dual operation systems are installed, they shall be so designed that the operation of any station shall cause the sounding of the signal only on the signaling devices located in the engine room, basement or other places in the building where the members of the fire brigade work or assemble. Approved means shall be provided at each station, so arranged that a subsequent operation of any station shall cause the sounding of the signals on all the gongs throughout the building. Such systems shall be of the coded closed circuit type.

RULE 12. EXISTING INSTALLATIONS.—Fire alarm signal systems heretofore installed in buildings in the City of New York and approved in writing by the fire commissioner shall be accepted as long as they are maintained in proper working order.

RULE 13. SOURCES OF ELECTRICAL ENERGY.—Sources of electrical energy used in operating fire alarm signal systems shall be: electric light and power systems, storage batteries and primary batteries. Such sources of energy shall be used under conditions and limitations specified by the board of standards and appeals.

In electric fire alarm signal systems one source of energy shall be connected to the system at all times. All auxiliary sources of energy shall be so arranged and controlled by automatic switch that when the primary source of energy fails, the second source will be automatically connected to the fire alarm signal system.

RULE 14. ISOLATED PLANTS.—Energy from isolated electric light or power plants may be used for fire alarm signal systems only when there is more than one generating unit and the plant is always in operation when the building is occupied. When only one generator unit is employed, the source of energy shall be supplemented by storage battery or other auxiliary service.

RULE 15. PUBLIC SERVICE.—When the energy for a fire alarm signal system is supplied by a public service light or power system, connection shall be made on the street side of the service switch, except that permission shall be given by the fire commissioner to connect on the house side of the meter in new buildings, when all electric wiring and appliances in the building have been approved by the administrative authorities having jurisdiction. When a house side connection is made in existing buildings, a certificate shall be furnished from an accepted authority certifying that all electric wiring and appliances in the building are properly installed and in good condition. The fire alarm cutout in house-side connections shall be the first connection on the house side of and as near as possible to the meter, and shall be enclosed in a locked or sealed metal cabinet.

For connection to outdoor overhead service lines special permission in writing from the fire commissioner shall be necessary.

RULE 16. STORAGE BATTERIES.—When a storage battery equipment is used as the sole source of energy for a fire alarm signal system, the storage batteries shall be provided in duplicate. Such installations shall be equipped with a switchboard or panel of approved material on which are mounted volt meters, ammeters, circuit breakers, fuses, resistances, switches, starting devices for motors, field rheostats for generator and other apparatus required for charging and operating the batteries.

RULE 17. PRIMARY BATTERIES.—When primary batteries are used to supply the energy for fire alarm signal systems, the batteries shall be ample in size to satisfactorily operate the system.

When such batteries supply the energy for open circuit systems, there shall be provided two sets of cells connected in multiple-series, having not less than six cells in each series, coupled together by means of approved battery connectors.

When caustic soda batteries are employed approved heat resisting jars shall be used and at least one transparent jar shall be provided in each series for the purpose of observing the condition of the elements.

RULE 18. ACCEPTANCE TEST.—Upon completion of a fire alarm signal system and as a condition of acceptance, a test of the entire installation shall be made under the direction of the fire commissioner. All electrical systems shall show an insulation resistance of not less than ten megohms.

The owner or contractor shall furnish all the necessary tools, instruments and labor to conduct this test when required by the fire commissioner.

RULE 19. DAILY AND MONTHLY TEST.—In factory buildings, as defined in the labor law, every fire alarm system shall be tested each morning immediately after the hour of starting work in the building to make sure that the system is maintained in an operative condition. No such system shall be used for any other purpose, except that daily dismissal signals may be given if authorized by the fire commissioner. The use of the system for fire drill purposes may be considered a test of those parts of the system actually used. Each sending station shall be tested at least once every month. All apparatus requiring winding shall be rewound after each operation and kept in normal condition.

A complete record shall be kept of the monthly tests and of all fire drills, which record shall be subject to inspection by the fire commissioner.

RULE 20. MAINTENANCE.—Interior fire alarm systems shall be maintained in operating condition at all times, unless the buildings are vacated for a period longer than one week. If the system becomes inoperative at any time, it shall be the duty of the owner or the person designated by him to be in charge of the system to notify all the occupants of the building and to take immediate steps to have the system restored to working order. If, for any reason, it becomes necessary to disconnect the source of energy or the operating medium of any system, the owner or other responsible person shall notify the fire commissioner at least forty-eight hours in advance of such disconnection, stating the reason therefor.

RULE 21. ALARM BOXES.—In fire alarm signal systems the metal case enclosing exposed or surface alarm boxes shall be of cast iron and drilled to receive the conduit. When exposed to moisture the box shall be enclosed in a suitable weather-proof outer shell. In new buildings, approved back-boxes imbedded in the wall may be used and the conduit shall be properly secured by lock nuts and bushings. All current-carrying parts shall be insulated from parts of opposite or lower polarities with approved insulating material.

All pull box cases shall be fitted with a glass panel or a door to protect the pull lever against accidental injury. Such door shall have a handle rigidly secured thereon and be so constructed as to open readily. The wording "In case of fire open door and pull down lever as far as it will go," or equivalent instructions, shall appear on the door.

All break-glass type fire alarm boxes shall be provided with suitable hammers on chains attached to or near the boxes with which the glass can readily be broken. All break-glass boxes shall have lettered on the fronts the words, "Fire Alarm—In case of fire break glass," and such additional instructions as may be necessary to send in an alarm.

On open circuit systems, alarm boxes shall have scraping type contacts with surfaces ample in size and mechanical strength and of sufficient capacity to carry the maximum current which may flow for at least one hour without appreciable heating.

On closed circuit systems, contact points operated by a break wheel and contact points on testing devices shall be of the scraping type. Such contact points shall be secured in a substantial manner to phosphor bronze springs and be so constructed as to positively break a circuit carrying one-tenth amperes at 250 volts under actual working conditions. Lever boxes shall be so designed as to automatically wind when the lever is pulled for alarm. Boxes requiring glass replacements shall be so arranged that replacements cannot be made until the mechanism is reset for another alarm.

RULE 22. STATION TESTING DEVICES.—When electrically operated fire alarm systems are installed, at least one station in each system shall be provided with an auxiliary switch or other device to test the signaling devices, located in one of the alarm boxes or mounted on the control board. In closed circuit systems, such testing device shall be arranged to make the test without operating the break wheel of the box.

Provision shall also be made for a silent test of closed circuit fire alarm box mechanisms without operating the signaling devices. Such device shall be designed to prevent any persons except those in authority from operating the same and to prevent the possibility of the box being left inoperative after the test.

RULE 23. SUPERVISING CURRENT.—When closed circuit fire alarm systems are used, a small current flow to constantly supervise each circuit shall be maintained. A milliam-

meter, or other approved current indicator shall be provided and so connected as to indicate the supervising current.

Such supervising circuit shall be provided with a trouble bell arranged to ring continuously in case of any disarrangement of the system. The trouble bell shall be placed in the engine-room or other approved location, free from moisture, dust, and possibility of mechanical injury, under frequent view and in audible range of some responsible person in the building, and shall be connected to the electric light or power service in the building. Permission may be granted by the fire commissioner to connect the trouble bell to a battery of at least four cells of approved type.

RULE 24. PROTECTION OF SENDING AND SIGNALING DEVICES.—In fire alarm signal systems all moving parts of sending stations and signaling devices shall be enclosed in metal casings, made dust-proof and damp-proof when necessary, and clearly marked with instructions for use.

Whenever necessary, hammer rods of gongs shall be suitably protected against mechanical injury or derangement by the use of a guard or other suitable means. If subject to mechanical injury, the entire device shall also be enclosed in a protecting case made of approved wire netting or perforated metal. All casings shall be insulated from current-carrying parts, but shall be grounded to the conduit in electrically-operated systems.

RULE 25. ELECTRIC APPARATUS.—In electrically operated interior fire alarm signal systems, not more than twenty alarm boxes nor more than fourteen gongs shall be placed on one circuit. All electrically actuated apparatus shall be so designed and constructed that it will operate satisfactorily at a current flow of 25 per cent. above or below the normal operating current. In battery systems, the normal operating current shall be indicated on all relays and gongs.

Magnet windings shall be impregnated with an insulating moisture-repelling compound or shall be of enameled wire.

All connections shall be properly protected, securely made, and, where subject to motion, shall be of approved flexible wire.

Binding posts shall be of such a character that wire is held between two flat surfaces.

Adjustments must be of such a character that they can be securely locked.

Contact points shall be ample in area, not only to take care of the current used in operation, but to insure long life, and shall be of pure silver, platinum, or other approved material.

The armatures of all relays shall primarily depend on gravity for their operation, but this action may be assisted by springs when approved by the fire commissioner.

RULE 26. CONTROL BOARDS.—All relays, current indicators, resistances, time limit devices, and other apparatus used in connection with the operation and supervision of closed circuit fire alarm signal systems shall be properly mounted on a panel of approved material, in a metal cabinet provided with lock and key. The control board shall be located in a place subject to the least vibration, free from moisture, inflammable gases, dust, and mechanical injury, and under frequent view of a responsible occupant of the building delegated by the owner to be in charge.

RULE 27. BATTERY CABINETS.—All batteries for fire alarm signal systems shall be placed in substantial protecting cabinets thoroughly ventilated, elevated not less than one nor more than five feet above the floor, and located in clean, dry and cool places where the temperature will not be less than 40 nor more than 100 degrees Fahrenheit. Main battery cabinets shall be so constructed that the condition of the elements may be observed without disturbing the cells.

Metal battery cabinets shall be constructed of sheet-iron or steel, not less than No. 14 U. S. Gauge in thickness, properly reinforced by angle irons, with self-closing doors provided with lock and key and wood shelves not less than seven-eighths of an inch thick, properly fastened and secured to prevent sagging. The interior and the exterior of the cabinet shall be protected with three coats of asphaltum compound, each coat to be thoroughly dry before the next is applied, or with baked enamel. Where dry cells are housed in metal battery cabinets, the supports shall be so constructed as to prevent the cartons from coming in contact with the metal of the cabinet and with each other.

Wood battery cabinets shall be constructed of the first grade of kiln dried wood not less than seven-eighths of an inch thick and shall be provided with self-closing door and approved lock. The shelves shall be not less than seven-eighths of an inch thick, properly fastened and secured to prevent sagging. The cabinet shall be of substantial construction, painted on the interior with three coats of asphaltum compound and on the exterior with three coats of lead paint or two coats of varnish. Where dry cells are housed in wood battery cabinets, the supports shall be so constructed as to prevent the cartons from coming in contact with each other.

RULE 28. ATTACHMENT TO WALLS.—All material and devices used in fire alarm signal systems shall be rigidly secured in position, and when attached to masonry walls, shall be fastened by through bolts, metal expansion shields or toggle bolts. Wooden plugs shall not be used.

When fire alarm apparatus is mounted upon a back board, such back board shall be not less than seven-eighths of an inch thick, filled with a non-absorptive compound with an air space of at least one-quarter of an inch behind the back board for the free circulation of air.

RULE 29. PAINTING OF EQUIPMENT.—All enclosing cases for fire alarm apparatus shall be finished in red, except where special permission is given by the fire commissioner to deviate from this requirement.

RULE 30. WIRING.—Except as may be otherwise specifically prescribed by the board of standards and appeals, the wiring shall conform to the requirements of Chapter 9 of the Code of Ordinances for light and power installations. Conduits shall contain only conductors used in the fire alarm system. All conductors shall be run in approved rigid iron conduit. Armored cable may only be used by special approval of the fire commissioner. When special care is taken to insure the wires against injury, four wires may be placed in half-inch rigid iron conduits. Splices shall be permitted only where absolutely necessary. Conductors shall consist of not less than No. 14 B. & S. gauge copper wire, having rubber insulation wall not less than $3/64$ inches thick.

Where necessary to assure reliable service, connections of conductors to terminals or binding posts shall be soldered. The use of a blow torch for soldering connections to terminals shall not be permitted.

Where wires pass underground from one building to another, they shall be enclosed in conduits and shall be lead encased. Wires between buildings, when not run in conduit, shall be at least equivalent in conductivity and tensile strength to No. 8 B. & S. gauge copper wire for box and signaling circuits and shall be supported at least every seventy-five feet on approved glass insulators and brackets. As far as possible they shall be run under, rather than over, electric light or power wires.

RULE 31. SPRINKLERED BUILDINGS, SOURCES OF WATER SUPPLY.—In the enforcement of the provisions of §83-a, labor law, with respect to fire alarm signal systems and fire drills, automatic sprinkler systems shall be deemed to have two adequate sources of water supply within the meaning of said section, if the system is a two source system as defined in the Rules of the Board of Standards and Appeals for Fire Extinguishing Appliances, or when the system is equipped with and supplied by either a gravity tank or a pressure tank and a fire department connection. (Amendment, December 6, 1917.)

RULES FOR THE CONSTRUCTION OF FIRE ESCAPES

ADOPTED BY THE BOARD OF STANDARDS AND APPEALS, JULY 2, 1918,

Effective July 29, 1918

RULE 1. In any building erected prior to October 1, 1913, now occupied or to be occupied as a factory, more than five stories in height and not exceeding nine stories in height, nor in any case more than 90 feet from curb level to top floor level, one of the required means of exit or escape under Section 79B-1 of the Labor Law may consist of an outside fire escape, provided that:

(a) Any such fire escape hereafter erected shall comply with all the provisions of §79-b-4, labor law, and in addition thereto:

(1) The balconies and stairs shall be protected on the outside by substantial railings to a height of at least 4 feet 6 inches, measured from floor of balcony or center of stair tread, constructed of bars at least one and one-half ($1\frac{1}{2}$) inch in diameter, spaced not more than six (6) inches on centers, or of substantial grill work, or of screening not less than No. 10 U. S. gauge wire with not more than one and one-half ($1\frac{1}{2}$) inch mesh, all rigidly braced;

(2) When there is safe egress from the roof of the building to any adjoining structure, the fire escape stairway shall continue to the roof, and if there be no safe means of egress, a gooseneck ladder shall be provided from the top story balcony to the roof;

(b) Any such fire escape erected prior to October 1, 1913, shall conform in every respect with the requirements of paragraph (a) of this rule, except that balconies may be not less than 3 feet in width; the connecting stairs not less than 20 inches in width, and placed at an angle not exceeding 60 degrees if the building is not over six stories in height, otherwise at an angle of 45 degrees; fire windows leading to balconies may be at window sill level if fixed steps not less than sixteen (16) inches wide are provided on the inside from floor level, leading thereto.

(c) Any such fire escape erected subsequent to October 1, 1913, and prior to these rules taking effect, unless previously accepted as one of the required means of exit or escape by the administrative official having jurisdiction, shall conform in every respect to paragraph (a) of this rule.

RULE 2. A fire escape shall not hereafter be accepted as constituting one of the required means of exit or escape under Section 79-b-1 of the labor law, in any building erected prior to October 1, 1913, now occupied or to be occupied as a factory, exceeding nine stories in height, or more than 90 feet from curb level to top floor level.

RULES RELATING TO SMOKING IN PROTECTED PORTIONS OF FACTORIES, AND IN SPECIAL CLASSES OF OCCUPANCIES

ADOPTED BY THE BOARD OF STANDARDS AND APPEALS, AUGUST 13, 1918

Effective September 3, 1918

RULE 1. PERMIT.—(a) Prohibition. No person shall smoke, or carry a lighted cigar or cigarette in any factory as defined in Article 1, Section 2, of the State Labor Law, nor in any portion of a factory, within the City of New York, except in such protected portions or special classes of occupancies as are specified in Rule 2 of these rules, and then only after the issuance of a permit by the fire commissioner.

It shall be the joint and several duty of the owner and of the lessee or lessees of the building containing such factory or factories to cause to be posted in each and every entrance hall, stairhall or room throughout the building, as well as in every elevator-car, in English, and also in such other language or languages as the fire commissioner shall direct, a notice of such prohibition, and the penalty for its violation.

(b) Application.—Application for such permit shall be made only by the owner of the building on suitable blank forms to be furnished by the fire commissioner.

(c) Time Limit.—Such permit shall be for a definite period, not exceeding one year, and shall not be renewed upon expiration until a reinspection of the premises for which it is issued has been made for the purpose of determining whether existing conditions warrant a renewal.

(d) Conditions.—The permit shall state the conditions under which, the hours between which, and the place or places in such factory where smoking may be permitted, and this permit shall be framed and kept posted in a conspicuous place in the factory.

(e) Revocation.—Violation of any of the conditions specified in the permit, in addition to incurring such penalties as are prescribed by law, shall be full and sufficient cause for the revocation of such permit by the fire commissioner, and he shall not again issue a permit for the same premises until at least one year has elapsed.

RULE 2. PERMISSIBLE CASES.—Smoking may be permitted in:—

(a) Factories engaged in the manufacture of cigars, cigarettes or smoking tobacco, when necessary for the efficient conduct of the business, provided that:

(1) No smoking other than that for sampling, testing and experimental purposes is carried on.

(2) Such smoking is conducted in a room provided especially for that purpose, separated from the rest of the building by fireproof or fire-resisting partitions, with all openings therein protected by self-closing fire doors, and, further, unless the building is of fireproof construction or equipped with an approved automatic sprinkler system, the floor and ceiling of such room shall be covered with fire-retarding material.

(3) Such chemical fire extinguishers as the fire commissioner may direct are installed.

(4) All waste paper and other inflammable waste materials are deposited in fireproof receptacles:

(b) Factories devoted entirely to one of the following occupancies:

Blacksmithing or horseshoeing;
Boiler making;
Brick, terra cotta or artificial stone works;
Forge shops;
Foundries;
Iron, steel, brass or copper works;
Machine shops;
Smelting;
Stone or monumental works;

provided that in any case:

(1) The building is not of wooden construction;

(2) Such chemical fire extinguishers as the fire commissioner may direct are installed;

(3) All waste paper and other inflammable waste materials are deposited in fireproof receptacles.

EXIT RULES

ADOPTED BY THE BOARD OF STANDARDS AND APPEALS, SEPTEMBER 6, 1917

Effective October 3, 1917

RULE 1. REVOLVING DOORS—DESCRIPTION.—Except as otherwise provided in the rules, revolving doors in doorways serving as required means of exit from any building shall be of an automatic, collapsible type equipped with self-releasing braces or other devices

so arranged that, when subjected to undue pressure from within the building, the wings will swing outwardly in the direction of exit and permit unobstructed egress, and that the width of vestibule entrance shall comply with the provisions of the building code for width of doorways.

RULE 2. REVOLVING DOORS—PROHIBITION.—Revolving doors shall be prohibited in exit doorways from assembly halls, asylums, auditoriums, churches, dance halls, hospitals, motion picture theatres, schools, theatres, or from any room or space within a building where more than three hundred (300) persons congregate for purposes of amusement, instruction or worship; except that the main entrance doorway to a hospital or sanitarium may be equipped with revolving doors when supplemented by swinging doors at this or other paths of egress.

RULE 3. REVOLVING DOORS—DEPARTMENT STORES.—Revolving doors shall be accepted in exit doorways from department stores, provided doorways of the legal required width, equipped with swinging doors, are installed and one or more such outwardly swinging doors are located immediately adjacent to each revolving door. Such swinging doors need not be equipped with handles on the outside.

RULE 4. EXISTING REVOLVING DOORS.—When it is desired to retain existing revolving doors as required means of exit in doorways from fireproof buildings used as club houses, court houses, hotels, libraries, museums, office buildings, railroad depots and restaurants, and from non-fireproof buildings of the above occupancy having less than three hundred (300) occupants, they shall be of an automatic, collapsible type, or supplemented by at least one swinging door adjacent to the revolving door.

When it is desired to retain existing revolving doors as required means of exit in doorways of existing non-fireproof buildings used as club houses, court houses, hotels, libraries, museums, office buildings, railroad depots and restaurants with an occupancy greater than three hundred (300) persons, they shall be of an automatic, collapsible type and shall be supplemented by not less than fifty (50) per cent. of the legal required exit doorway width, equipped with swinging doors, with at least one swinging door located adjacent to each revolving door.

RULE 5. REVOLVING DOORS—NEW BUILDINGS.—In buildings other than assembly halls, asylums, auditoriums, churches, dance halls, department stores, hospitals, motion picture theaters, schools and theaters, hereafter erected or altered for an occupancy coming under the exit provisions of the building code, not more than fifty (50) per cent. of the aggregate clear width of doorways serving as required exits shall be equipped with revolving doors, and each revolving door shall have an outwardly swinging door located adjacent thereto.

RULE 6. REVOLVING DOORS—SUBWAY ENTRANCES.—Required exit doorways from buildings which serve in addition as a means of subway entrance and exit may be equipped with revolving doors of an automatic collapsible type, provided doorways of the legal required width equipped with swinging doors are also installed and one or more such outwardly swinging doors are located adjacent to each revolving door.

RULES FOR FIRE RETARDING CONSTRUCTION

ADOPTED BY THE BOARD OF STANDARDS AND APPEALS, AUGUST 30, 1917

Effective September 26, 1917

RULE 1. FIRE RETARDING MATERIALS FOR GARAGES, MOTOR VEHICLE REPAIR SHOPS AND OIL SELLING STATIONS.—In garages, motor vehicle repair shops and oil selling stations any material or form of construction shall be deemed fire retarding within the meaning of section 73, subdivision 3, of the building code, that resists the action of flame and heat when subjected to a continuous fire for one hour at an average temperature of seventeen hundred (1,700) degrees Fahrenheit without the passage of flame, and with a maximum temperature rise to four hundred (400) degrees Fahrenheit on the side from the fire. The point at which the temperature of transmitted heat is measured shall be protected from the external air and weather conditions.

When the test specimen is in the form of partition construction, the area under test shall be not less than one hundred (100) square feet and the least dimension shall be not less than nine (9) feet. When in the form of floor construction, the area under test shall be not less than two hundred (200) square feet and the least dimension shall be not less than fourteen (14) feet.

During the fire, the floor construction shall support the live load for which it is designed, and after the fire shall safely sustain twice the designed live load with a maximum deflection of not more than one two-hundredth ($1/200$) part of the span.

RULE 2. WOOD JOISTED FLOOR CONSTRUCTION.—Wood joisted floor construction shall be accepted as fire retarding construction in non-fireproof buildings used as

garages, motor vehicle repair shops or oil selling stations when the beams are protected on the upper and under sides with the fire retarding materials specified in rules for floor and ceiling coverings.

RULE 3. FLOOR COVERING.—Any one of the following forms of construction shall be accepted as fire retarding for the covering of the upper sides of wood floor beams in joisted floor construction in non-fireproof buildings used as garages, motor vehicle repair shops or oil selling stations:

(a) Seven-eighths ($\frac{7}{8}$) inch wood under flooring protected with a membrane of two-ply waterproofing covered with not less than two and one-half ($2\frac{1}{2}$) inches of 1-21/25 concrete or better, reinforced with not less than one-fourth ($\frac{1}{4}$) of one (1) per cent. of steel mesh.

(b) Two and one-half ($2\frac{1}{2}$) inches of 1:2:4 concrete applied directly to the top of the joists, with or without temporary support, reinforced with not less than one-fourth of one per cent. steel rods, mesh or steel lath, and having the tops of the joists coated with approved waterproof paint or protected by tar paper on the top and on the sides for a distance of three inches from the top.

RULE 4. CEILING COVERING.—Any one of the following forms of construction shall be accepted as fire retarding for the covering of the undersides of wood floor beams in joisted floor construction in non-fireproof buildings used as garages, motor vehicle repair shops or oil selling stations:

(a) One-half ($\frac{1}{2}$) inch plaster boards with pointed joints covered with No. 26 U. S. gauge sheet metal with one (1) inch lapped seams nailed to the wood beams when spaced not more than sixteen (16) inches on centres, or nailed to furring strips when the floor beams are spaced more than sixteen (16) inches on centres;

(b) Two thicknesses of one-quarter ($\frac{1}{4}$) inch asbestos boards laid with tight staggered joints and nailed to the beams, when spaced not more than sixteen (16) inches on centres, or nailed to furring strips when the floor beams are more than sixteen (16) inches on centres;

(c) Metal lath weighing not less than three pounds per square yard, attached to furring strips and plastered with Portland cement mortar at least three-quarters ($\frac{3}{4}$) inch thick.

RULE 5. ATTACHMENT TO CEILING.—Fire retarding ceiling in non-fireproof buildings used as garages, motor vehicle repair shops or oil selling stations shall be attached to wood floor beams and girders in such manner as to maintain an air space between the wood beams, and all wood beams shall be seasoned before applying the protective coat.

RULE 6. OPENINGS IN FIRE RETARDING FLOORS.—Pipes or conduits which pass through floors shall be fitted with metal thimbles and made watertight for a height of three (3) inches above the floor.

RULE 7. COLUMNS.—All structural posts and columns in non-fireproof buildings required to be fire-retarded shall be protected with the fire retarding materials specified for ceiling coverings in these rules, or with any of the materials accepted in fireproof construction; except that an air space shall not be required around steel or cast-iron columns.

Where necessary for protection against mechanical injury, the fire retarding protection on columns shall be jacketed to a height of five (5) feet from the ground with No. 4 U. S. gauge metal.

RULE 8. GIRDERS.—All girders in non-fireproof buildings required to be fire-retarded shall be protected with the fire retarding materials specified for ceiling coverings in these rules, or with any of the materials acceptable in fireproof construction; except that an air space need not be provided around steel girders.

RULE 9. SHAFT ENCLOSURES.—Existing stairways and vertical shafts in non-fireproof business buildings hereafter converted to be used as garages, motor vehicle repair shops or oil selling stations shall be enclosed in fire retarding partitions continued through the non-fireproof floor construction, and when unfilled wood stud partitions are used, the space between the floor beams shall be fire-stopped with incombustible materials. All openings in such partitions shall be protected with accepted metal covered fire doors or windows. Whenever necessary for protection against mechanical injury, the partition shall be jacketed to a height of five (5) feet on the garage side with No. 4 U. S. gauge metal. Any one of the following forms of partitions shall be accepted for the enclosure:

(a) Two by four inch wood studs, spaced not more than sixteen (16) inches on centres, covered both sides with metal lath weighing not less than three pounds per square yard, attached to furring strips and plastered with Portland cement mortar at least three-quarters ($\frac{3}{4}$) of an inch thick.

(b) Two by four inch wood studs spaced not more than sixteen (16) inches on centres, covered both sides with seven-eighths ($\frac{7}{8}$) inch wood sheathing, one-half ($\frac{1}{2}$) inch plaster boards with pointed joints and No. 26 U. S. gauge sheet metal with one inch lapped seams;

(c) Two by four inch wood studs spaced not more than sixteen (16) inches on centres, covered both sides with seven-eighths ($\frac{7}{8}$) inch wood sheathing, two thicknesses of one-quarter

($\frac{1}{4}$) inch asbestos boards laid with tight staggered joints and jacketed with No. 16 U. S. gauge metal on the garage side to a height of five (5) feet;

(d) Two by four inch wood studs spaced not more than sixteen (16) inches on centres, filled in solidly between the studs with four inches of approved fireproof materials and covered on both sides with No. 26 U. S. gauge metal;

(e) Existing wood stud, lath and plaster partitions covered on the garage side with No. 26 U. S. gauge sheet metal with one-inch lapped seams.

RULES FOR FIRE EXTINGUISHING APPLIANCES

ADOPTED BY THE BOARD OF STANDARDS AND APPEALS, MAY 24, 1917, AND

Effective June 27, 1917

AS AMENDED MAY 2, 1918

RULE 1. DEFINITION OF AUTOMATIC EXTINGUISHER SYSTEMS.—Automatic extinguisher systems shall consist of a system of piping connected to one or more acceptable sources of water supply, or other extinguishing medium, provided with distributing devices so arranged and located as to discharge and diffuse automatically under the action of heat an effective stream or spray over every part of the interior of the building area in which a fire may start or to which it may be communicated.

RULE 2. CLASSIFICATION OF SPRINKLER SYSTEMS.—For the purpose of these rules, sprinkler systems shall be classified as:

(a) Automatic Wet Pipe Systems, in which all pipes and sprinkler heads are at all times filled with water;

(b) Automatic Dry Pipe Systems, in which the pipes and sprinkler heads are filled with compressed air and the water supply is operated by a Dry Pipe Valve; and

(c) Non-Automatic Systems, in which all pipes and sprinkler heads are maintained dry with a fire department connection for water supply.

RULE 3. APPROVED DEVICES.—Automatic sprinklers and accessory appliances shall include all devices approved as such by the Bureau of Standards, Washington, D. C.; by the Underwriters' Laboratories, Inc., of Chicago; by the Associated Factory, Mutual Laboratories of Boston; and all devices which meet the tests prescribed by the board of standards and appeals.

RULE 4. WATER SUPPLY.—Approved sources of water supply shall be classified as Automatic and Auxiliary.

(a) Automatic Sources shall include the Gravity Tank, the Pressure Tank and the Public Water System.

(b) Auxiliary Sources shall include the Fire Pump and the Fire Department Connection.

RULE 5. GRAVITY TANK.—Gravity tanks shall contain an available quantity of water sufficient to supply twenty-five per cent. (25%) of the number of sprinkler heads in the average protected fire area for twenty (20) minutes, but not less than 5,000 gallons; and the bottom of the tank shall have an elevation of not less than twenty (20) feet above the highest line of sprinklers below the main roof.

Where a tank capacity in excess of 25,000 gallons is required by this rule, the amount of water to be provided in excess of 25,000 gallons shall be specified by the board of standards and appeals.

The tank shall be filled through a fixed pipe, independent of the sprinkler piping, not less than two (2) inches in size discharging into the top of the tank, or through a by-pass not less than two (2) inches in size around the check valve in the discharge pipe, provided the supply is of sufficient pressure to fill the tank. The water supply and connections shall be capable of supplying the tank at a rate of not less than sixty-five (65) gallons per minute.

RULE 6. PRESSURE TANK.—Pressure tanks shall contain sufficient water to supply twelve and one-half per cent. ($12\frac{1}{2}\%$) of the number of sprinklers in the average protected fire area for twenty (20) minutes, but not less than 5,000 gallons. No single tank shall have a capacity greater than 9,000 gallons. The tank shall be kept two-thirds ($\frac{2}{3}$) full of water under a pressure of seventy-five (75) pounds per square inch, and shall be so proportioned and located that a pressure of not less than fifteen (15) pounds per square inch will be available on the highest line of sprinklers below the main roof when all the water has been discharged from the tank.

The tank shall be placed either on the roof or in the highest sprinkled story.

Where a tank capacity in excess of 25,000 gallons is required by this rule, the amount of water to be provided in excess of 25,000 gallons shall be specified by the board of standards and appeals.

The water shall be supplied through a fixed pipe, independent of the sprinkler piping, not less than two inches in size with a one and one-quarter ($1\frac{1}{4}$) inch connection to the tank,

or through a by-pass not less than two (2) inches in size around the check valve in the discharge pipe provided the supply is of sufficient pressure to fill the tank. The water supply and connections shall be capable of supplying the tank at a rate of not less than sixty-five (65) gallons per minute without reducing the pressure in the tank. The tank shall have a fixed metallic horizontal line on the end opposite the glass gauge, or other acceptable device, to indicate the level of the water when the tank is two-thirds full.

The air compressor shall be of sufficient capacity to increase the air pressure at the average rate of one (1) pound in two minutes in each pressure tank.

RULE 7. PUBLIC WATER SYSTEM.—Direct connection to the city water supply shall be capable of furnishing water at not less than fifteen (15) pounds per square inch static pressure at the highest line of sprinklers under the main roof.

Subject to the requirements of the department of water supply, gas and electricity, the size of each connection shall be as large as that of the main riser and not less than four (4) inches, and shall have a conveniently accessible control valve fixed to it at, or near, the curb, or when possible, still further away from the building. The control valve shall be fitted with a frost and waterproof box, not less than four (4) feet nor more than six (6) feet below the curb, with a fixed stem extending to a compartment at the level of the sidewalk. The cover shall be bolted to the casing and shall be so marked as to be quickly located and to indicate the purpose of the valve. The valve shall be of indicating pattern, operated by a special socket wrench approved by the department of water supply, gas and electricity.

RULE 8. FIRE PUMP.—Steam or electric standard fire pumps shall receive water supply from a suction tank, a direct connection to the city water main or other approved sources capable of supplying the pump at its rated capacity for sixty (60) minutes. The rated capacity of the pump shall be not less than five hundred (500) gallons per minute, and shall be sufficient to supply twenty-five per cent. (25%) of the number of sprinklers in the average protected fire area.

The pump shall be located in a room of fireproof construction, properly ventilated, lighted and drained, enclosed in eight (8) inch brick or concrete walls with approved fire doors at openings and with fireproof floor and ceiling construction. If located in the lowest story of the building, the pump shall be placed on a foundation not less than one (1) foot in height. The pump room shall be readily accessible with safe egress for the attendant.

A reliable source of energy for driving the pump shall be provided. For steam pumps, provision shall be made for sufficient steam power to operate the pump at full rated capacity, and a steam pressure of not less than fifty (50) pounds shall be maintained at the pump at all times. Where there is more than one boiler, the pipes and valves shall be so arranged as to permit the cutting out of any one boiler without interrupting the steam supply to the pump from the other boilers. The boiler room shall be cut off from the remainder of the building by fireproof floor and wall construction with approved fire doors at openings.

Electrical energy from a public service plant shall be acceptable as a source of energy for driving electric fire pumps. When local power plants supply the energy for operating electric pumps, two motor generator units shall be provided, or one generator unit supplemented by a public service break-down switch. Local electric power plants shall be located in rooms of fireproof construction with approved fire doors at openings.

RULE 9. SPRINKLER DISCHARGE.—For the purpose of computing the capacity of water supplies, standard one-half ($\frac{1}{2}$) inch sprinkler heads shall be assumed to have an average discharge of twenty (20) gallons per minute.

RULE 10. FIRE AREA.—A fire area is any floor space enclosed on all sides by exterior walls or fire walls or a combination of both. The number of sprinklers in the average protected fire area shall be determined by dividing the total number of sprinklers on a system in one fire section by the number of sprinklered stories in such section. In determining the required capacity of water supplies, the number of sprinklers in the average protected fire area need not include those located in low positions, such as under benches, low shelves, closets and platforms and between cars in car barns.

RULE 11. FIRE DEPARTMENT CONNECTION.—All automatic sprinkler systems shall be provided with at least one two-way Siamese connection on each street front of the building for connection to the fire department hose. Buildings fronting on only one street shall be provided with at least two Siamese connections when the street frontage exceeds one hundred and fifty (150) feet in width.

All Siamese hose connections hereafter installed, except those on piers or warehouses intended for fire boat use, shall be three (3) inches in size. Fire boat connections shall be three and one-half ($3\frac{1}{2}$) inches in size. All hose connections shall be female, with standard fire department threads.

The inlets shall be placed at least eighteen (18) inches and not more than two (2) feet above the sidewalk, in a horizontal position accessible to the fire department, and shall be provided with a four (4) inch discharge connecting with a four (4) inch pipe to the sprinkler system for three (3) inch fire department connection and with a six (6) inch discharge outlet and six (6) inch pipe for three and one-half ($3\frac{1}{2}$) inch fire boat connection. Each inlet shall be provided with a clapper valve machined to a true face.

Each Siamese connection shall be designated by raised letters at least one (1) inch in size, cast in the fitting in a clear and prominent manner and reading for the service designated, viz.: "Base. Spkr.," etc., as the case may be. If the entire building is sprinklered, the fitting shall be marked "Auto. Spkr."

RULE 12. AUTOMATIC SPRINKLER SYSTEMS.—Automatic sprinkler systems shall be classified as:

(a) One Source Systems, supplied with water from any one of the automatic sources; and

(b) Two Source Systems, supplied with water from a combination of any two of the automatic sources; two pressure tanks with a total water capacity twice that required for a one source supply; direct connection to the city water supply on two different streets, so located that the closing of the controlling valve on one main will not eliminate the main on the other street; or a direct connection to the city water supply and one of the auxiliary sources provided the water supply main is at least six (6) inches in size, the main is fed both ways and a two (2) inch test pipe at the top of the sprinkler riser shows a flowing pressure of fifteen (15) pounds per square inch between the hours of six A. M. to six P. M.

RULE 13. SPRINKLER SPACING.—One-half ($\frac{1}{2}$) inch sprinkler heads shall be spaced as herein provided:

MILL CONSTRUCTION.—Under mill ceiling (smooth solid plank and timber construction, 5 to 12 foot bays) one line of sprinklers shall be placed in center of each bay and distance between the sprinklers on each line shall not exceed the following:

8 feet in 12 foot bays;
9 feet in 11 foot bays;
10 feet in 10 foot bays;
11 feet in 9 foot bays;
12 feet in 5 to 8 foot bays.

Measurements shall be taken from center to center of timbers.

Ceilings of modified mill construction having bays less than three feet shall be treated as open joist construction and sprinkler heads spaced accordingly.

Bay timbers spaced three feet or more on centers, but less than five feet on centers, will require special ruling.

JOISTED CONSTRUCTION.—Under open finish joisted construction, ceilings, floors, decks and roofs, the lines shall be run at right angles to the joists and the sprinklers "staggered spaced," so that heads will be opposite a point half way between sprinklers on adjacent lines, and the distance between sprinklers shall not exceed 8 feet at right angles to the joists or 10 feet parallel with joists, the end heads on alternate lines being not more than 2 feet from wall or partition; except that permission may be given to install but one line of sprinklers in bays 10 to 11½ feet wide from center to center of the timbers which support the joists. In all cases where such bays are over 11½ feet wide, two or more lines of sprinklers shall be installed in each bay as required by the rules for spacing. Where beams are flush with the joists, sprinklers shall be spaced according to the general rule. Permission may be given to space the sprinklers closer together on a line, but in no case shall the area covered by a single sprinkler exceed 80 square feet.

SMOOTH FINISH, SHEATHED OR PLASTERED CEILINGS.—Under smooth finish, sheathed or plastered ceilings, in bays 6 to 12 feet wide (measurements to be taken from center to center of timber, girder or other projection or support forming the bay), one line of sprinklers shall be placed in center of each bay, and distance between the sprinklers on each line shall not exceed the following: 8 feet in 12 foot bays; 9 feet in 11 foot bays; 10 feet in 6 to 10 foot bays. Bays in excess of 12 feet in width and less than 23 feet in width, shall contain at least two lines of sprinklers; bays 23 feet in width or over, shall have the lines therein not over 10 feet apart. In bays in excess of 12 feet in width, not more than 100 square feet of ceiling area shall be allotted any one sprinkler.

FIREPROOF CONSTRUCTION.—The rules of slow-burning construction shall apply as far as practicable. The rule may be modified, however, the intent being to arrange the spacing of sprinklers to protect the contents rather than the ceilings; but in no case shall the distance of a sprinkler on a line exceed 12 feet to a sprinkler on an adjoining line.

DISTANCE FROM WALLS.—The distance from wall or partition to first sprinkler shall not exceed one-half the allowable distance between sprinklers in the same direction. Additional sprinklers may also be required in the narrow pockets formed by bay timbers or beams and wall. Where beams, girders, columns, walls, partitions or other obstructions prevent the effective discharge of water, additional heads shall be installed to effectively sprinkle the area.

VERTICAL SHAFTS.—In the vertical shafts having inflammable sides, a sprinkler shall be provided within the shaft for each two hundred (200) square feet of the inflammable

surface, in addition to sprinklers at the tops of shafts. Such sprinklers shall be installed at each floor when practicable, and always when shaft is trapped. Where practicable, sprinklers shall be "staggered" at the alternate floor levels, particularly when only one sprinkler is installed at each floor level.

PITCHED ROOFS.—Under a pitched roof sloping more steeply than 1 foot in 3 feet, sprinklers shall be located in peak of roof, and those on either side of the peak shall be spaced according to above requirements. Distance between sprinklers shall be measured on a line parallel with roof. Where the roof meets the floor line, sprinklers shall be placed not over 3½ feet from where roof timbers meet floor.

Sprinklers not more than 2½ feet distant each way from the peak of roof, measured on a line with the roof, may be used in lieu of sprinklers located in peak of roof as above.

In sawtooth roof construction, the end sprinklers on the branch line shall be not over 2½ feet from the peak of the sawtooth.

SPECIAL LOCATIONS.—In special locations, such as over electrical generating and transforming apparatus and switchboards, where water extinguishing equipment would be detrimental, the sprinkler heads may be omitted at the discretion of the administrative official.

RULE 14. SPRINKLER POSITION.—All sprinklers shall be located, wherever possible, in an upright position on top of the pipes, except that sprinkler heads on automatic wet pipe systems may be pendant on concealed piping and when construction or occupancy of a room or enclosure makes it preferable.

Sprinkler deflectors shall be parallel to ceilings, roofs or the incline of stairs, but when installed in the peak of a pitched roof they shall be horizontal. Distance of deflectors from ceilings of mill or other smooth construction, or bottom of joists of open joist construction, shall be not less than three (3) inches nor more than ten (10) inches.

In fireproof buildings, the distance between deflectors and panel ceilings shall not exceed fifteen (15) inches.

Not less than eighteen (18) inches effective clear space shall be left below the sprinklers, so that they may form an unbroken spray blanket from sprinkler to sprinkler and sides of room. Any stock piles, racks or other obstructions interfering with such action shall not be permitted.

RULE 15. PIPE SIZES.—The number of one-half (½) inch sprinklers on a given size pipe in one fire area in any one story shall not exceed the following:

Size of Pipe.	Maximum No. of Sprinklers Allowed.
¾-inch	1 sprinkler
1 " "	2 sprinklers
1 ¼ " "	3 " "
1 ½ " "	5 " "
2 " "	10 " "
2 ½ " "	20 " "
3 " "	36 " "
3 ½ " "	55 " "
4 " "	80 " "
5 " "	140 " "
6 " "	200 " "

Where practicable, it is desirable to arrange the piping so that the number of sprinklers on a branch line will not exceed eight.

When the piping is arranged on the "gridiron" plan, the permissible number of sprinklers may be doubled, provided the supply main is of the size indicated in the schedule for the total number of sprinklers.

Where feed mains supply branch lines of only two sprinklers each, the conditions approach those of long single lines. Such feeds shall usually be centrally supplied where there are over eight (8) or ten (10) branch lines. Lines up to fourteen in number may be fed from end, provided 2½-inch pipe supplies not more than sixteen sprinklers.

Buildings having slatted floors, or large unprotected floor openings without approved stops, shall be treated as one room with reference to the pipe sizes, and the feed main shall be of sufficient size to accommodate the number of sprinklers called for. Larger pipe sizes than called for in the schedule may be required wherever the construction or conditions introduce unusually long runs of pipe or many angles. Buildings with blind attics with small unprotected openings to floor below, may be piped from the system on the ceiling of floor below, provided pipe size schedule is not overloaded on sizes 3 inches or under.

RULE 16. FEED MAINS.—The size of feed mains shall not be less than the size of riser and shall be arranged to run as direct as possible from source of water supply to riser.

Feed mains for stair or other towers without approved stops between floors, when piped on independent riser, shall be of sufficient size to accommodate the total number of sprinklers in such tower.

RULE 17. RISERS.—There shall be one or more separate risers in each building and in each section of the buildings divided by fire walls. Risers shall be arranged to provide "Centre Central," or "Side Central" supply to sprinkler main. Each riser shall be of sufficient size to supply all the sprinklers on said riser in one story according to the schedule of pipe sizes in Rule 15. If the conditions warrant, special permission will be granted allowing the sprinklers in a fire section of small area (total number of sprinklers not to exceed 48 per floor) to be fed from the riser in another section.

Risers shall not be located close to windows, shall be properly protected from mechanical injury and freezing, and shall be properly supported on foundations and by floor plates, clamps, couplings or hangers.

RULE 18. PIPES AND FITTINGS.—All pipe shall be full-weight standards wrought iron or steel threaded pipe, well reamed and screwed up tight into fittings without reducing the waterway. Fittings shall be standard cast-iron fittings, and shall be long turn pattern on feed mains and risers.

Such fittings shall be designed and guaranteed for a working pressure of 150 pounds per square inch and must be capable of withstanding a hydrostatic test pressure of 750 pounds per square inch without failure.

All pipe shall be secured to the ceiling, walls and other parts of the building with standard steel, wrought or malleable iron hangers.

Extra heavy fittings shall be employed where the normal pressure in the pipe system exceeds one hundred and fifty (150) pounds per square inch, and shall be designed for a working pressure of 250 pounds per square inch and be capable of withstanding a hydrostatic test pressure of 1,250 pounds per square inch without failure.

All underground pipe shall comply with the specifications for cast-iron pipe of the American Water Works Association.

RULE 19. PROTECTION OF PIPES AND SPRINKLERS.—When exposed to moisture, sprinkler pipes and hangers shall be protected against corrosion whenever found necessary by thoroughly cleaning the pipe of all scale and grease and painting with a coat of red lead and linseed oil paint or other acceptable moisture resistive paint. When exposed to chemical fumes, the pipe and fittings shall be coated with graphite or other approved chemical resistive paint. Care shall be taken not to paint the sprinkler heads.

Supply pipes of risers in low basements or low spaces under ground floors exposed to frost, shall be properly protected by a masonry or wood enclosure, properly heated, or filled with mineral wool, sawdust or tar mixed with granulated cork, extending below bottom of pipe and through the top flooring of ground floor, or the pipe shall be protected with three alternate layers of one-inch hair felt and building paper or by other approved method. When of wood, such enclosure shall be constructed double with a layer of tar paper between the two thicknesses of wood.

Where risers, drains, heating pipes, etc., pass through cinder concrete floors or partitions, they shall be protected with a metal sleeve or be grouted with cement mortar.

Wherever sprinklers are exposed to corrosion, the heads shall be protected with an approved hermetically sealed cover, or with an approved wax coating.

RULE 20. DRAINAGE.—All sprinkler pipe and fittings shall be so installed that they can be thoroughly drained, and where practicable, all piping shall be arranged to drain at the main drips.

Drains or drip pipes shall be so arranged as not to expose any part of the sprinkler system to frost, and shall be so connected, either by check valves or other means, that they will not overthrow domestic service or other connections to the same sewer or house drain.

Drains, pitched not less than one-quarter ($\frac{1}{4}$) inch in ten (10) feet, shall be installed:

- At the base of the main riser;
- At each alarm valve;
- At each dry-pipe valve;
- At each gravity tank;
- At each pressure tank;
- At each fire department connection;

On each floor, if independent floor control valves are used; and

At each supply main, when the water in the same cannot be removed through any of the above drains. Such drains shall be installed with controlling valves so that flowing tests may be made to determine if the water supplies or connections from yard mains to the inside of the building are in order without causing water damage or overflowing service connections to the same house drain. Any such drain shall be not less than two (2) inches in size except that drains at independent floor valves may be one and one-quarter ($1\frac{1}{4}$) inches in size. The drain at the main riser shall discharge into a cone or sight drain, or if carried through the wall and exposed to the weather, it shall be fitted with a hood or down-turned elbow.

On automatic wet pipe systems, the horizontal branch pipes shall be pitched not less than one-quarter ($\frac{1}{4}$) inch in ten (10) feet to drain towards the sources of supply with drip valves at the low points.

On automatic dry pipe systems, branch pipes shall be pitched at least one-half ($\frac{1}{2}$) inch in ten (10) feet.

RULE 21. TEST PIPE.—On all automatic systems a test pipe of not less than $\frac{3}{4}$ -inch in diameter shall be connected directly with each riser in upper story and arranged to discharge, through a $\frac{1}{2}$ -inch brass outlet, preferably to a point where it can readily be seen. With long runs or many angles, size of test pipe shall be increased to one (1) inch or larger.

RULE 22. PRESSURE GAUGES.—A four and one-half ($4\frac{1}{2}$) inch double-spring Bourbon pressure gauge shall be provided in all automatic sprinkler systems as follows:

- Above dry-pipe valves;
- Below dry-pipe valves;
- At the pressure tank;
- At the air compressor;
- Above the alarm valve;
- Below the alarm valve; and

In the connections from city water supply.

Provision may be made for taking the pressure both above and below the alarm valve and the dry-pipe valve with only one gauge at each valve.

Gauge connections shall be taken from the supply main or riser and not from the two-inch drain or test pipe.

Gauge connections shall be taken from the supply main or riser and not from the two-inch drain or test pipe.

Gauges shall be installed in a suitable place protected from freezing and be controlled by a valve with arrangements for draining. A plugged outlet, not less than one-quarter ($\frac{1}{4}$) inch in size, shall be located between each valve and gauge for purpose of installing the inspector's gauge.

RULE 23. VALVES.—All valves two (2) inches in diameter and under shall be of brass or bronze, or other approved non-corrodible material. Valves over two (2) inches in diameter shall be of brass, or bronze or iron body, brass-mounted, or of other approved non-corrodible material.

All sidewalk Siamese inlet valves, caps and chains shall be of galvanized cast-iron or other approved non-corrodible material.

All gate valves shall be solid or double wedge disc, stuffing box pattern with handwheel, outside screw and yoke, or other approved indicator pattern.

All check valves shall be approved, straight way regrinding pattern so built that the clappers may be readily removed for repairs.

RULE 24. WATER SUPPLY GATE VALVES.—The piping connecting each source of water supply with the sprinkler system shall be provided with a gate valve of the outside screw and yoke type, sealed open and tagged to designate its purpose, so located as to control each source of water supply except that from fire department hose connections. All such gate valves shall be located within the building where easily visible and readily accessible and as close as possible to the supply inlet.

RULE 25. WATER SUPPLY CHECK VALVES.—The piping connecting each source of water supply with the sprinkler system, including fire department connections, shall be provided with a check valve.

On two-source systems, check valves shall have a gate valve on each side to permit repair of check without shutting off both supplies, except that where the two sources of supply consist of tanks located above the highest line of sprinklers, a gate valve need only be provided on the down stream side of each check valve.

RULE 26. CONTROL VALVES.—All automatic sprinkler systems shall be provided with a main control or shut off valve arranged to be readily accessible and sealed in the open position; except that when the sprinkler system is fed from water supplies on the roof of the building, independent and readily accessible floor control valves, sealed in the open position, may be installed.

When not more than ten (10) sprinkler heads in any system are exposed to cold and subject to freezing, shut-off valves may be provided to discontinue the water supply to such sprinklers between November 1 and April 1. A greater number of sprinklers than ten (10) located in places which cannot be properly heated shall be installed on an approved automatic dry-pipe system.

RULE 27. DRY-PIPE VALVES.—Dry-pipe valves shall be located as near as practicable to the sprinkler system in an accessible place protected from mechanical injury and freezing.

The air pressure in sprinkler systems under dry-pipe valve control shall not exceed forty (40) pounds per square inch, nor be permitted to fall below twenty-five (25) pounds per square inch, nor shall it be less than one-sixth of the water pressure in any case.

Wet-pipe sprinkler systems in which only twenty-five (25) per cent. of the sprinklers are required to be maintained dry for protection from freezing shall have only such sprinklers under air-valve control.

Not more than four hundred (400) sprinklers shall be controlled by one dry-pipe valve.

The air compressor shall have a capacity of not less than eleven (11) cubic feet per minute and the air supply for the pump shall be taken, if possible, from a room containing dry air to avoid the introduction of moisture into the system.

The air pressure on dry-pipe systems shall be maintained throughout the year.

RULE 28. ALARM VALVE.—All automatic wet-pipe sprinkler systems shall be equipped with an alarm valve so constructed that a flow of water through a one-half ($\frac{1}{2}$) inch orifice will operate an electric or mechanical gong.

Dry-pipe valves shall be equipped with a reliable device to give either an electrical or mechanical alarm.

RULE 29. HIGH AND LOW WATER AND PRESSURE ALARM.—All gravity tanks shall be equipped with a device to indicate when the water falls below or rises above the normal level in the tank, with an indicator or alarm located in the engineer's room near the pump.

All pressure tanks shall be equipped with a device to indicate when the pressure in the tank falls below seventy (70) or rises above eighty (80) pounds per square inch with an indicator or alarm located in the engineer's room near the compressor.

RULE 30. HEATING OF TANKS.—The water in all sprinkler supply tanks subject to freezing shall be protected by internally heating the water or enclosing the tank in a frost proof house properly heated and lighted.

RULE 31. CONCEALED PIPE SYSTEMS.—All pipe in concealed pipe systems shall be of standard full-weight wrought iron or steel, painted with two coats of protective paint, one before and one after installation. Such pipe shall be installed in ducts or be encased in cement mortar and shall be inspected prior to concealment. When installed in the concealed space between floor arches and ceiling, such pipe shall be supported by hangers and all pipe, fittings and hangers be protected with two coats of paint.

RULE 32. PREPARATION OF BUILDING.—Floor or wall openings and other structural defects which prevent the banking up of heated air and retard the automatic action of sprinkler heads shall be provided with the necessary curtain boards and draft stops to permit specific control of the fire by the local sprinklers.

Curtain boards shall project at least three (3) inches below the lowest sprinkler.

RULE 33. SPRINKLER SYSTEM TESTS.—All automatic sprinkler systems, excluding the water supply tanks, shall be tested after installation at not less than 150 pounds pressure for two hours, and at 50 pounds in excess of the normal pressure when the normal pressure is in excess of 100 pounds. All pressure tanks shall be tested after erection to a test pressure of one and one-half times the working pressure. To prevent the possibility of serious water damage in case of a break, the pressure shall be maintained by a small pump, the main controlling gate being meanwhile kept shut. Brine or other corrosive chemicals shall not be used for testing systems.

In dry system an air pressure of 40 pounds shall be pumped up, be held for 24 hours, and all leaks stopped which allow a loss of pressure of over 2 pounds for the 24 hours.

In the case of dry systems with differential type of dry-pipe valve, the valve shall be held off its seat during the test to prevent injuring the valve.

Non-automatic systems shall be tested after installation at not less than fifty (50) pounds in excess of the pressure necessary to reach the highest line of sprinklers.

All tests of installed systems shall be made by the contractor in the presence of the fire commissioner.

RULE 34. NON-FIREPROOF BUSINESS BUILDINGS.—Automatic sprinklers required in non-fireproof business buildings under the provisions of Chapter 5, Article 4, Section 72, code of ordinances, unless otherwise specifically provided in these rules, shall consist of at least a One Source System.

RULE 35. THEATRE BUILDINGS.—Automatic sprinklers required in theatre buildings under the provisions of Chapter 5, Article 25, Section 524, code of ordinances, shall consist of at least a One Source System.

RULE 36. FIREWORK STORAGE.—Automatic sprinklers required in buildings in which fireworks are stored or sold under the provisions of Chapter 10, Article 6, Section 92, code of ordinances, shall consist of a Two Source System.

RULE 37. NITRO-CELLULOSE PRODUCTS.—Automatic sprinklers required in buildings in which nitro-cellulose products are stored under the provisions of Chapter 10, Article 19, Section 232, code of ordinances, shall consist of a Two Source System.

RULE 38. INFLAMMABLE MOTION-PICTURE FILMS.—Automatic sprinklers required in buildings in which inflammable motion-picture films are stored under the provisions of Chapter 10, Article 20, Section 241, code of ordinances, shall consist of a Two Source System.

RULE 39. EXISTING INSTALLATIONS AND APPROVALS.—Automatic extinguisher systems and devices heretofore approved and accepted by the authorities having jurisdiction shall not be required to conform to the provisions of these rules; and all such systems heretofore installed shall not be required to be altered to conform to these rules so long as the fire hazard due to construction and occupancy of the building is not increased and the system after inspection is found to be in good working order.

RULES FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF ELEVATORS

ADOPTED JULY 30, 1918, BY THE BOARD OF STANDARDS AND APPEALS

Effective August 26, 1918

ENACTING RESOLUTION

Resolved, that the Rules for the Construction, Maintenance and Operation of Elevators, adopted by the Board of Standards and Appeals, November 15, 1917, and effective December 19, 1917, as amended May 2, 1918, and Rules 400 to 445, inclusive, of the Industrial Code, adopted November 24 and December 18, 1914, effective January 1, 1915; readopted with amendments, effective April 15, 1915; by the State Industrial Commission, be and they hereby are repealed as of August 26, 1918; and

Resolved, further, that in place thereof the foregoing Rules No. 1 to No. 20, adopted July 16, 1918, as amended July 30, 1918, and No. 21 to No. 43, adopted July 30, 1918, entitled "Rules for the Construction, Maintenance and Operation of Elevators" be and they hereby are substituted and that these rules as adopted be effective August 26, 1918.

Adopted, July 30, 1918.

RULE 1. APPLICATION OF ELEVATOR RULES.—Every elevator, escalator, freight incline or amusement device, within the City of New York, in addition to conforming to all provisions of the labor law, building code or other laws or ordinances, as are applicable thereto, shall comply with the requirements of these rules.

Existing and future installations shall at all times be maintained by the owner in a safe condition and in conformity with the requirements of these rules.

RULE 2. DEFINITIONS RELATING TO ELEVATORS.—(a) The terms "elevator," "passenger elevator," "freight elevator" and "amusement device" shall have the meanings indicated in §560 of the building code.

(b) The term "dumbwaiter" shall apply to such special form of freight elevator, whether power driven or manually operated, the dimensions of which do not exceed nine square feet in horizontal section nor four feet in height.

(c) The term "hand power elevator" shall apply to such forms of passenger or freight elevator which are manually operated and the dimensions of which exceed nine square feet in horizontal section.

(d) The term "sidewalk type elevator" shall apply to such special form of freight elevator, either power driven or manually operated, the platform of which does not exceed fifty (50) square feet in area and is suspended or supported at one or more points on the underside.

(e) The term "escalator" shall apply to a moving continuous inclined stairway or runway designed for elevating or lowering passengers.

(f) The term "freight incline" shall apply to a moving continuous inclined runway for elevating or lowering freight.

(g) The term "future installations" shall apply to any elevator, machinery or equipment used in connection therewith, installed after these rules become effective.

(h) The term "existing installations" shall apply to any elevator, machinery or equipment used in connection therewith, either already installed, in process of installation, or for which plans are on file with the superintendent of buildings prior to August 26, 1918.

(i) The term "alteration" shall include any essential change to the elevator car, counterweights, rails, machinery, safeties or other equipment or direct motive power; except that any repair work made necessary by the ordinary operation of the elevator shall not be deemed an alteration.

RULE 3. PERMITS.—The application required by §562, building code, for the installation or alteration of elevators, amusement devices, etc., shall be in triplicate on blanks furnished by the superintendent of buildings, stating the size, manner of construction, speed, capacity, other essentials, and mode of operation of the same, and accompanied by necessary drawings; except that applications for the installation of dumbwaiters and conveyors or hoists may consist of a notice to the superintendent of buildings that such installation is to be made.

RULE 4. ALTERATIONS.—In making alterations to existing installations, the parts changed or altered must conform in every respect to the rules governing future installations, and where parts of the elevator are damaged from any cause, the damaged parts must be completely renewed, at the discretion of the superintendent of buildings.

Where hand power elevators are changed to power-driven elevators, they shall conform to every rule governing power-driven elevators, except, that when the rise is not more than thirty-five feet, and the capacity is not increased, existing wood guide rails may remain in use. In such conversions the use of a power-driven friction grip device is prohibited when the capacity exceeds 800 pounds.

RULE 5. CHANGE OF CLASSIFICATION.—In future, no freight elevator shall be used for passenger service, unless such elevator conforms to the rules governing future installations of passenger elevators in so far as they relate to safety equipment, hoist ropes, carrying capacity, car enclosure including gates and emergency exit, shaft openings and doors, and motive power.

In existing installations where such change of classification is made and the hatchway is unenclosed, a substantial enclosure of lawful partitions extending from floor to ceiling and flush with the hatchway shall be constructed, with all openings protected by proper shaft doors.

RULE 6. TESTS OF NEW ELEVATORS.—In future installations all elevators shall be tested as follows:

The cars of all power-driven elevators shall be loaded to their maximum carrying capacity and operated up and down the shaft several times to test the lifting capacity of the machinery and the operation of the upper and lower automatic limit devices. The car shall be stopped at various levels in the shaft to test the operation of the machine brake.

The cars of all power-driven elevators having speeds exceeding one hundred (100) feet per minute, and of hand-power elevators with a rise of more than fifteen (15) feet, shall be loaded to their maximum carrying capacity, run to the top landing and made to travel downward beyond normal speed, so as to automatically operate the speed retarder or speed governor and car safety device and the slack rope device when required, and (except for hand-power elevators) to stop the machine. This rule shall not be construed, however, to require safe lift elevators to be tested with safe lift load.

The cars of power-driven elevators having speeds of one hundred (100) feet per minute or less shall be loaded to their maximum carrying capacity, run to the top landing and started down at normal speed. At this speed the governor shall be manually operated to test the action of the safety equipment.

RULE 7. CARRYING CAPACITY.—In existing installations the owner, lessee or other person having charge or control of any elevator, except a dumbwaiter, and in future installations the manufacturer of any such elevator, shall cause to be fastened in a conspicuous place in the car of said elevator a metal plate, having suitable letters and figures on same, which shall designate the number of pounds weight which said elevator can safely carry.

Future installations shall be designed to sustain in all their parts a load per square foot of platform area inside the car of not less than the following:

- (a) 75 pounds for power-driven passenger elevators;
- (b) 50 pounds for freight elevators having platform areas not exceeding 100 square feet;
- (c) 50 pounds for hand-power passenger elevators.

RULE 8. RULES TO BE POSTED.—In the car of every passenger elevator the superintendent of buildings shall cause to be posted and maintained, in a conspicuous place, for the guidance and information of operators and passengers, such of the rules relating to the operation of elevators as he may deem necessary to insure public safety, including the number of passengers that such car may carry at one time.

RULE 9. FULL AUTOMATIC PUSH BUTTON ELEVATORS.—In future installations full automatic push button elevators must be so designed and equipped that the car, at its rated speed and load, will automatically stop when the car floor is level with or not more than three inches from the designated landing floor.

The car gate and shaft doors shall be equipped with approved devices that will prevent the operation of the car until the car gate is closed and the shaft door is closed and locked. The shaft door shall not be capable of being opened unless the floor of the car is within three inches of the landing. A push button to operate an alarm bell shall be provided in the car, for the purpose of notifying the person in charge of the premises, in case the car becomes stopped in the shaft from any cause. The shaft doors shall be so arranged that they cannot be opened after the car leaves the landing, except in emergency cases, and then only by a special key which must be provided and kept in the possession of the person having charge of the building.

RULE 10. BELT OR CHAIN DRIVES.—In future installations no hoisting machine driven by a chain or belt device from a motor or countershaft shall be used in connection with any passenger elevator.

RULE 11. SHAFT OPENINGS.—In shafts hereafter constructed for passenger elevators, no more than one opening shall be allowed in each story, and all openings in the several stories shall be located one above the other, except that doors may be located on opposite or adjacent sides in the several stories when the distance from the car operating device to the door lock does not exceed forty-eight inches and can at all times be fully controlled by the elevator operator without leaving the car operating device. Door openings may be located on opposite or on adjacent sides of the shaft in the first or main entrance story and in the top story, provided that the openings in the remaining stories are all on the same side of the shaft, that a satisfactory device is installed preventing the operation of the car while the car gate distant from the operator is open, that an attendant is always present to control the shaft doors located in the first or top stories, and that there are no offsets or recesses on the inside of the shaft walls.

No alteration not in compliance with the above provision shall be made to any existing passenger elevator shaft.

RULE 12. HOISTWAY ENCLOSURE.—In existing and future installations where no enclosure of solid partitions is required around the hoistway by the provisions of the building code, labor law or these rules, there shall be provided a substantial vertical enclosure extending from the floor for a distance of not less than six (6) feet on the side or sides where there are no openings in the car for loading purposes. On all other sides, gates or doors must be provided. Such enclosure may be constructed of mesh work, grille-work or slatted partitions, provided that when mesh work is used it shall be of not less than No. 10 U. S. gauge wire or No. 13 U. S. gauge expanded metal, with mesh not exceeding one and one-half ($1\frac{1}{2}$) inches; when grille-work is used there shall be not more than one and one-half ($1\frac{1}{2}$) inches space between any two members, except that where plain straight bars, not filled in with scroll are used, there shall be not more than one (1) inch space between members; when wood slats are used they shall be not less than three-eighths ($\frac{3}{8}$) of an inch thick, spaced not more than one (1) inch between slats.

In all cases where existing grille work permitted by law or regulation as a shaft enclosure is altered, such alteration shall be of substantial material and construction, properly braced and carried the full height of openings, with not more than one and one-half inch space between any two members; except that where straight bars not filled in with scroll work, are used, there shall be not more than one inch between members. Where deemed necessary, existing grille work with spaces exceeding those specified in this rule shall be made safe by suitable screen or wire mesh, or wire-glass construction.

RULE 13. SHAFT DOORS.—In existing and future installations all gates or doors leading to any shaft in which power-driven passenger elevators are operated (except full automatic push button elevators) shall be locked, bolted or securely fastened on the shaft side. Such shaft doors or gates shall be closed by the operator before the car is put in motion.

In future installations of passenger elevators, keys for opening the shaft doors or gates from the outside of the shaft, in case of emergency, shall be provided and shall be restricted in use to persons in responsible charge of the building.

In existing and future installations in factory buildings only, the openings in every passenger or freight elevator shaft or hoistway enclosure shall be protected in one of the following manners:

- (a) by properly constructed sliding doors;
- (b) by combination slide and swing doors;
- (c) by hinged or swinging doors equipped with approved devices to insure the shaft doors being closed and locked before the car can start from the landing;
- (d) by hinged or swinging doors, either manually operated or self-closing, with auxiliary gates not less than five (5) feet six (6) inches in height (except for hand-power elevators having the pull rope located in front of the shaft entrance, in which case gates may be two (2) feet six (6) inches substantially constructed of wood or metal, with not more than two (2) inches space between any two parallel members, and shall close automatically upon the car leaving the landing in either direction.

When shaft doors are equipped with electric contacts or other locking devices, an approved emergency release shall be provided on the car within easy reach of the operator.

RULE 14. CAR GATES.—In existing and future installations, all entrances to the cars of power-driven passenger elevators shall be provided with substantial folding or sliding gates or doors, and where floor tracts are used the same must be kept level with the finished floor surface of the car. All folding gates over three feet wide at the entrance to shaft or car shall have top and bottom braces, spaced not more than eighteen inches on centres when the gates are fully expanded. All car gates shall be closed by the operator before the car is put in motion.

In future installations passenger elevator car gates shall be equipped with an approved device or devices that will prevent the operation of the car while the car gates are open, and an approved emergency release shall be provided on the car within easy reach of the operator.

RULE 15. COUNTERWEIGHTS.—In future installations all counterweights shall have their sections securely bolted together with one or more rods, as determined by the

superintendent of buildings. Such rods must pass through all the sub-weights and at least one portion of the frame work. No continuous forged straps shall be permitted.

In existing and future installations where counterweights run in the same shaft as the car, they shall, when at the uppermost position, be protected on all exposed sides the full length of the counterweight with substantial and properly secured shields of iron or steel not less than No. 16 U. S. gauge; except that for plunger or fixed stroke piston hydraulic or traction type elevators no top shield shall be required. Where no compensating chains or ropes are attached to the counterweight, similar shields shall be provided eighteen inches above the bottom of the counterweight runway and extending upwards at least five feet. In existing installations, where the clearance between car and counterweight is not more than one and one-half inches, neither top nor bottom shields shall be required, but in lieu thereof four tell-tale metal chains not less than five feet long shall be suspended from the bottom of the counterweight.

RULE 16. SPEED GOVERNORS.—All power-driven elevators with a rise of more than fifteen feet not already equipped with a speed governor and safety (except sidewalk-type elevators and existing freight elevators of less than thirty-five feet rise and direct plunger elevators) shall have at the top of the elevator shaft a governor properly connected to a safety device attached to the underside of the car platform, in such manner that the car will be brought to rest with an easy and gradual stop, or in a distance not greater than nine feet at a speed of seven hundred feet per minute, provided that on elevators having a speed of one hundred feet per minute or less, safeties of the instantaneous type may be used. Every governor operating a car safety shall be set to trip the safety at a speed not exceeding forty per cent. above the rated speed given in the application, but in no case exceeding eight hundred and fifty feet per minute; but this shall not require any governor to trip the safety at a speed less than one hundred and fifty feet per minute. When a speed governor has been set for the rated speed it shall be sealed. When safeties of the instantaneous type are used, a proper flexible means of application must be interposed between the safety and the governor.

RULE 17. LIMIT DEVICES.—In future installations all power-driven elevators shall have approved upper and lower limit devices in the shaft or on the car, and in drum type elevators they shall also be provided on the machine.

RULE 18. ELEVATOR BRAKE.—In future installations every electric elevator shall be equipped with an electric or electro-mechanical brake that will bring the car to rest when the car operating device is brought to the stop position or when any of the electric safety devices operate.

When the elevator is driven by a belt from an electric motor, the brake must be arranged to operate should the motor belt break or leave the pulleys.

RULE 19. OPERATING DEVICE.—In future installations every elevator driven by electric power and operated by hand rope, lever, wheel or other non-self-centering device, shall be provided with an approved device preventing the operation of the car, after the interruption of the current, until the operating device has been first returned to the inoperative position, and electric car operating switches shall be self-centering and self-locking in the inoperative position.

RULE 20. REVERSE PHASE RELAYS.—In future installations every elevator motor operated by polyphase alternating electric current shall be equipped with a reverse phase relay.

RULE 21. SLACK ROPE DEVICE.—In future installations all power-driven elevators, including power-driven sidewalk elevators, operated by drum hoisting machines shall have approved automatic slack rope devices that will stop the machine if, from any cause, the hoisting ropes or chains become slack.

RULE 22. CAR LOCKING DEVICE.—No elevator shall be used for the carrying of safes or other material of a greater weight than the normal lifting power of such elevator, unless the machine is provided with special equipment and the car is equipped with an approved locking device which will hold it at any landing independent of the hoisting ropes while such safe or other material is being loaded or unloaded.

RULE 23. HAND-POWER ELEVATOR SAFETY DEVICES.—In future installations every hand-power elevator (except sidewalk type elevators) with a rise of more than fifteen feet, shall be equipped with an approved safety device that will immediately stop and hold the car with a full load if the rope breaks, and with an approved automatic speed retarder and a hand-operated brake operating in both directions.

RULE 24. ESCALATORS.—In future, every escalator installed shall be equipped with an approved safety device to prevent any accidental downward reversal and with an approved stopping device.

RULE 25. CAR CONSTRUCTION.—In future installations the car and car frame of every power-driven elevator and of every hand-power elevator with a rise of more than thirty-five (35) feet, shall be of incombustible materials; except that the platform may be of wood covered on the underside with incombustible materials. The car enclosure and flooring may be of hard wood. The car, car frame and enclosure of every hand-power elevator with a rise of thirty-five (35) feet or less may be constructed of wood.

RULE 26. PASSENGER CAR ENCLOSURE.—In existing and future installations every passenger elevator car shall be fully enclosed on all sides not used for loading or unloading, and on the top, with substantial construction.

In future installations where grille work is used for the car enclosure, including the top, it shall be constructed with not more than one and one-half inch space between any two members; except that where straight bars not filled in with scroll work are used there shall be not more than one inch space between members. When the clearance between car and counterweight is less than two (2) inches, that part of the car enclosure opposite the counterweight runway shall be of solid construction or screened with not more than one-half ($\frac{1}{2}$) inch mesh of not lighter than No. 16 U. S. gauge wire, to a height of not less than six (6) feet, six (6) inches.

In existing installations in factory buildings only, where the spaces exceed those specified for future installations, it shall be deemed satisfactory if the grille work is made safe by suitable screen or wire mesh fastened to the car enclosure.

RULE 27. EMERGENCY EXIT.—In future installations every power-driven passenger elevator car shall have a trap door in the top, of such a size as to afford easy egress for passengers, but not less than sixteen inches in least dimension nor less than four hundred square inches in area. When there is more than one elevator in a shaft and the vertical distance between any two consecutive shaft door openings exceeds thirty (30) feet, there shall be provided in addition to the trap door an emergency side exit to the adjacent car.

In existing installations not already provided with an emergency exit, a trap door as specified for future installations shall be provided; except that when the cross head or car top construction renders it impracticable to provide such trap door, this requirement may be waived by the superintendent of buildings, if egress, in case of emergency, is possible through shaft openings, or to an adjacent car.

RULE 28. FREIGHT CAR ENCLOSURE.—In existing and future installations in factory buildings only, every freight elevator car shall be enclosed on all sides not used for loading or unloading, with substantial construction, to a height of five (5) feet, six (6) inches, or to the cross head, when this is less than five (5) feet, six (6) inches above the car platform.

In future installations, where an enclosure of open construction is used, the space between any two parallel members shall not exceed one inch.

RULE 29. FREIGHT ELEVATOR COVER.—In existing and future installations in factory buildings only, every freight elevator car shall be provided with a substantial cover or grating constructed of not less than No. 8 U. S. gauge wire or its equivalent in strength, and of a mesh that will reject a one and one-half ($1\frac{1}{2}$) inch diameter ball. Sections of the cover or grating may be arranged to swing upward for handling long material, but such cover or grating shall be closed at all other times. In covers hereafter installed (except where car gates are provided) that part of the cover facing the entrances to the hoistway, extending the full width of the car, shall be hinged on a line not less than eight (8) inches nor more than twelve (12) inches back from the edge of the landing, and the hinged section shall be self-closing.

RULE 30. SPACE BETWEEN SADDLES AND CAR.—In future installations there shall be not more than one and one-quarter inch, nor less than three-quarters of an inch space between the floor of the car and the floor saddles, and where the saddles project into the shaft the same shall be properly bevelled on the underside at an angle of not less than sixty degrees to the horizontal.

RULE 31. LIGHTS.—In existing and future installations the cars of all elevators shall be properly lighted at all times when in service.

RULE 32. GUIDE RAILS.—In future installations, guide rails for both car and counterweights of all elevators (except dumbwaiters, and hand-power elevators with a rise of thirty-five feet or less), shall be of iron or steel. They shall be fastened to the sides of the shaft with wrought or cast-iron brackets of such strength and design and so spaced that the guide rails and their fastenings shall be able to safely withstand the application of the safety when stopping a fully loaded car under test. For elevators requiring safeties, the guiding surfaces of the car guides shall be finished smooth and joints shall be tongued and grooved or dowelled, and rails shall extend to the level of or above the overhead beams, and shall be bottomed on a suitable support.

The weights of steel or iron guide rails shall be not less than given in the following table:

WEIGHT OF GUIDE RAILS PER LINEAL FOOT

Total Weight of Car and Live Load, or Weight of Counterweight.	Weight of —Car Guide Rails— With Without Guide Rail Guide Rail Safeties. Safeties.		Weight of Counter- weight Guide Rails— With Without Guide Rail Guide Rail Safeties. Safeties.	
	Safeties.	Safeties.	Safeties.	Safeties.
0- 4000 lbs.	7½	7½	7½	6½
4001-15000 "	14	14	14	7½
15001-40000 "	30	30	30	7½

RULE 33. ROPES.—In future installations, all elevators (except dumbwaiters) shall have not less than two ropes independently connected to the car and to each set of counterweights. In drum type machines, the lifting and counterweight ropes shall have at least one full turn of the rope on the drum when they have reached the limit of travel. Every rope hereafter used shall have a factor of safety of not less than six for freight elevators, and not less than eight for passenger elevators. The diameter of any hoist or counterweight rope hereafter installed (except for hand-power elevators and sidewalk type elevators) shall be not more than one-fortieth ($1/40$) of the diameter of any sheave or drum over which it passes. All ropes used in the operation of elevators shall be of steel, iron or marlin covered. Where overhead machines are used, equalizer arms will be permitted on the car and counterweights. Nothing in this rule shall prohibit the use of chains on sidewalk elevators instead of ropes.

RULE 34. AUXILIARY FREIGHT COMPARTMENTS.—In future installations no elevator shall be permitted to have attached above, below or on the side of the car a freight compartment or similar device.

In existing installations, entrances to freight compartments shall be protected by folding gates, as required for passenger elevators, and so arranged that the elevator cannot be operated until the gate is closed.

RULE 35. OVERHEAD GRATINGS.—In every elevator shaft (except existing elevator shafts, dumbwaiter shafts or the shafts of sidewalk elevators outside the building line) immediately under the sheaves at the top of the shaft, or when the machine is located at the top of the shaft, at the level of the top of the machine beams, there shall be provided and placed a substantial grating of iron or steel capable of sustaining not less than seventy-five pounds per square foot. No two members of such grating shall be spaced more than one and one-half inches apart. When such grating does not extend over the entire area of the shaft, the open edges shall be protected by substantial screened railings not less than three feet high. Every such grating shall extend at least two and one-half feet beyond the general contour of the sheaves or machinery. Deflecting sheaves extending below the machine level, or hoist and counterweight sheaves located at the sides of the shaft, shall be protected by gratings or cradles of a construction similar to that required for the gratings. Fireproof floor construction shall be accepted as the equivalent of the grating.

Nothing in this rule shall prevent the placing of a trap door in such a grating where other suitable access cannot be had.

Any grating hereafter placed in an existing elevator shaft shall conform to the requirements of this rule.

RULE 36. ELEVATOR PIT.—In every elevator shaft hereafter constructed (except shafts for dumbwaiters, for sidewalk elevators and for hand-power elevators with a rise of less than thirty-five feet), the distance from the floor saddle of the lowest landing to the bottom of the pit shall not be less than four feet when the speed does not exceed two hundred and fifty feet per minute, not less than five feet when the speed exceeds two hundred and fifty but does not exceed four hundred feet per minute, and not less than six feet when the speed exceeds four hundred feet per minute, and in no case shall there be less than two feet in the clear between the bottom of the pit and the lowest point of the underside of the car floor when the car is at the lowest possible position. In the case of power-driven sidewalk type elevators, the clear space between the bottom of the shaft and underside of the car floor shall be not less than six inches. The pits herein required at the bottom of elevator shafts shall not be used for piping, machinery, or for any purpose not required for the elevator equipment; but this shall not prevent the encroachment upon such pits, in the case of new elevators installed in existing buildings, of the foundations of bearing walls and columns to an extent not exceeding twenty-five per cent. of the area of the pit.

RULE 37. OVERHEAD CLEARANCE FOR CARS.—For all elevator shafts hereafter installed (except shafts for sidewalk type elevators) there shall be provided a sufficient clear space, when the car is at the top landing, to allow a run-by of not less than two feet for elevators having a speed not exceeding one hundred feet per minute, not less than three feet

for elevators having a speed exceeding one hundred feet per minute and not exceeding three hundred and fifty feet per minute and not less than five feet for elevators having a speed exceeding three hundred and fifty feet per minute.

RULE 38. OVERHEAD CLEARANCE FOR COUNTERWEIGHTS.—In future installations the clearance space between the top of the counterweight and the overhead beams when the car has completely compressed the pit buffers shall be not less than six (6) inches for traction and hydraulic type elevators, and not less than three (3) feet for drum type elevators.

RULE 39. MACHINERY ROOM.—All parts of the elevator machinery for power-driven elevators shall be properly enclosed, and suitable light provided. In buildings hereafter erected free and safe access must be provided to all parts of the elevator machinery and there shall be not less than twelve (12) inches clearance at limit stop devices on machine and outboard bearings of motor. In future installations in existing buildings, such clearance shall be provided as deemed necessary by the superintendent of buildings, but need not exceed that specified for buildings hereafter erected. When the machine is located at the bottom of the shaft, it shall be protected with a substantial pit pan.

RULE 40. SPEED.—The speed of all power-driven elevators shall not exceed seven hundred feet per minute.

RULE 41. BUFFERS.—In future installations for all power-driven elevators (except sidewalk type elevators) there shall be provided substantial spring buffers, pneumatic buffers, or oil buffers for the car and counterweights, provided that for the cars and counterweights of all elevators having speeds of more than three hundred and fifty feet per minute, substantial oil buffers shall be installed.

RULE 42. SUPPORTING BEAMS.—Supporting beams hereafter installed for elevator sheaves or machinery (except in dumbwaiter shafts) shall be of iron or steel.

RULE 43. DETERMINATION OF QUESTIONS.—When any existing installation for either passenger or freight service is deemed by the Superintendent of Buildings to be in an unsafe or dangerous condition it shall be made safe in such manner as he shall prescribe, and all defective parts necessary of replacement shall conform, in so far as possible, with the rules governing future installations.

Where there are practical difficulties in the way of carrying out the strict letter of the foregoing rules, the superintendent of buildings shall have power to vary their provisions so that the spirit of the law shall be observed and public safety secured and substantial justice done, provided that whenever such variations are granted by a superintendent of buildings it shall be indorsed in writing upon the permit over the signature of such superintendent.

MEMORANDUM

Barrett Specification Roofs



Jameson Roofing Company, Roofing Contractors

America's Largest Dye Plant Is Covered with Barrett Specification Roofs—

THE National Aniline & Chemical Company, Inc., is the biggest concern in the new American dye industry. It has plants in various parts of the country and today is turning out dyes equal in every way to those formerly produced in Germany.

Its most important plant is the Schoellkopf Works located at Buffalo, N. Y., illustrated herewith.

This plant was designed and constructed by The John W. Cowper Company, one of the largest firms of engineers in this country, and it represents the very best in building construction.

Quite naturally Barrett Specification Roofs were chosen to cover the various buildings in preference to any other type because the experience of many years has demonstrated that

these roofs have a longer life than any other and cost less per year of service. The reasons for their long life are:

First,

because they are constructed of Barrett Specification Pitch and Felt, the greatest waterproofing materials known.

Second,

because a greater amount of waterproofing is used in Barrett Specification Roofs than in any other kind of roof-covering, and the amount of waterproofing material in the roof largely determines its life.

Third,

because under the 20-Year Guaranty Plan the roofs must be constructed under the supervision of our inspectors, and we know, therefore, that they will be constructed right.

In view of all this, do you wonder that Barrett Specification Roofs are more popular than any other type for use on permanent buildings of all kinds?

The 20-Year Guaranty Bond

We are now prepared to give a 20-Year Surety Bond on all Barrett Specification Roofs of fifty squares and over, in all towns in the United States and Canada with a population of 25,000 and over, and in smaller places where our Inspection Service is available.

Our only requirements are that The Barrett Specification dated May 1, 1916, shall be strictly followed and that the roofing contractor shall be approved by us.

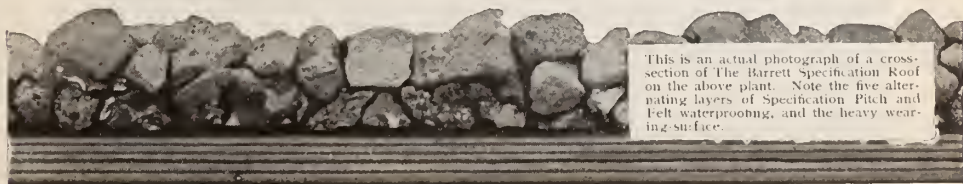
Copies of The Barrett Specification, with roofing diagrams, mailed free on request.

The *Barrett* Company

New York Chicago Philadelphia Boston St. Louis Cleveland
Cincinnati Pittsburgh Detroit Birmingham Kansas City Minneapolis Salt Lake City Nashville Seattle Peoria

THE BARRETT COMPANY, Limited

Montreal Toronto Winnipeg Vancouver St. John, N. B.
Halifax, N. S. Sidney, N. S.



This is an actual photograph of a cross-section of The Barrett Specification Roof on the above plant. Note the five alternating layers of Specification Pitch and Felt waterproofing, and the heavy wearing surface.

BRICK WORK

After an inexhaustible research and thorough investigation, including the severest fire and water tests that could be applied to building construction, we do not hesitate to say that brick work far surpasses that of any other form of constructional work now known to science. Either structural steel or concrete measures up to commercial tests, as generally known, but where these materials have been subjected to extreme heat and streams of water have then been applied to buildings constructed of these materials, under these conditions the results have been disastrous.

Building brick in the course of manufacture is subjected to from 2800 to 4000 degrees Fahrenheit, and all the combustible material has been consumed, consequently no fire test that can be hereafter applied will affect this indestructible product. As a result of this' and because of the economy of transportation and the facility with which this material can be laid in a building, there is a very noticeable "back to brick" movement in all forms of construction.

The crushing test likewise demonstrates superiority of this material. Hard, well-burned brick, such as that manufactured in the Hudson River Valley, will withstand a test of from 3000 to 5000 pounds per square inch. There can be no economy, therefore, in using other material.

A further proof of the indestructibility of brick, which other building materials cannot claim, is the fact that when buildings are torn down, common brick can be readily cleaned and economically delivered and relaid, without showing any marked deterioration in the new construction.



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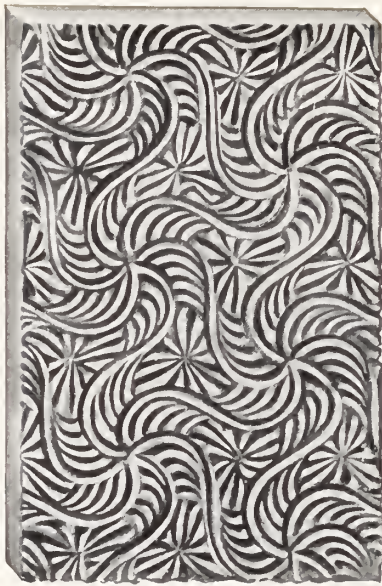
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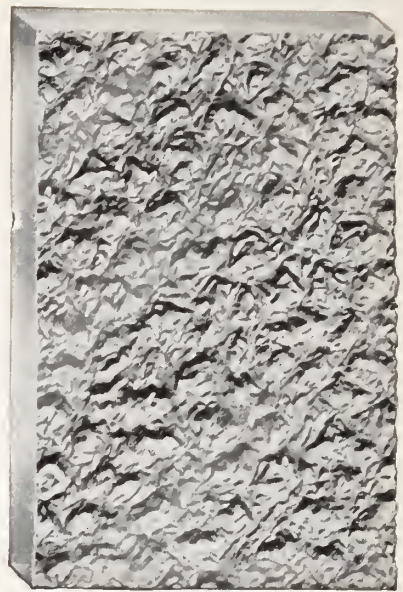
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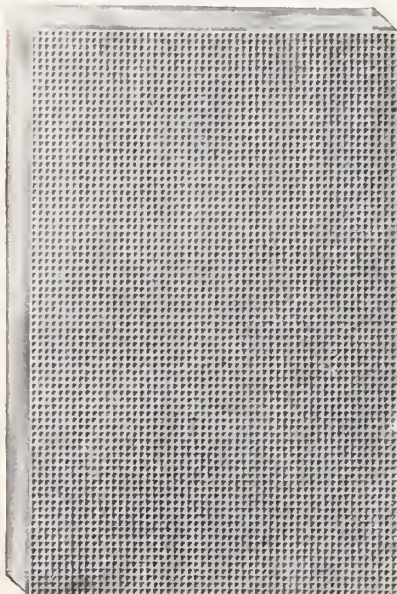
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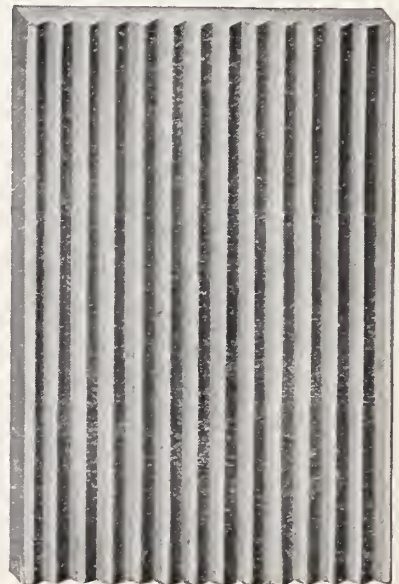
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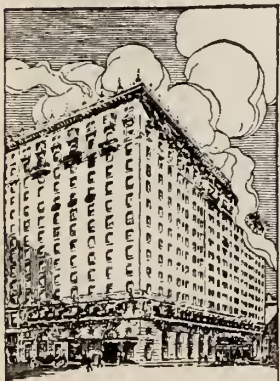
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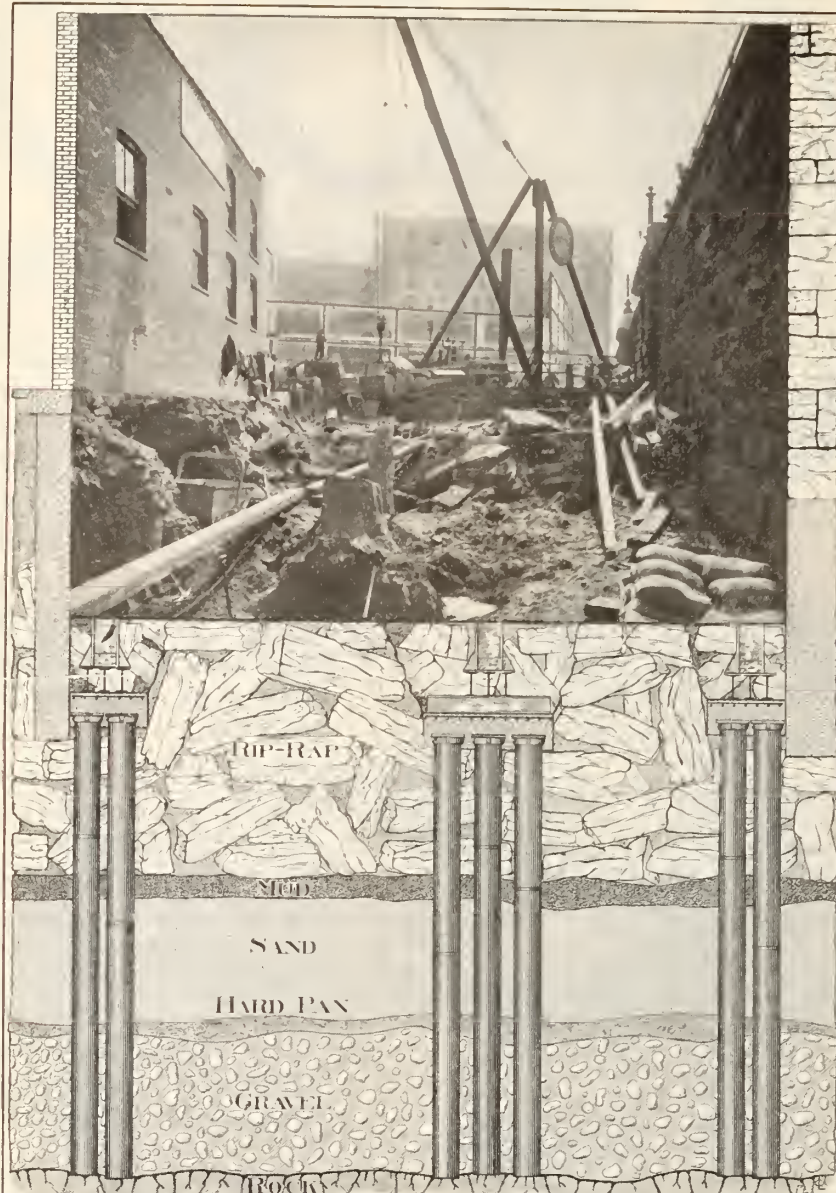
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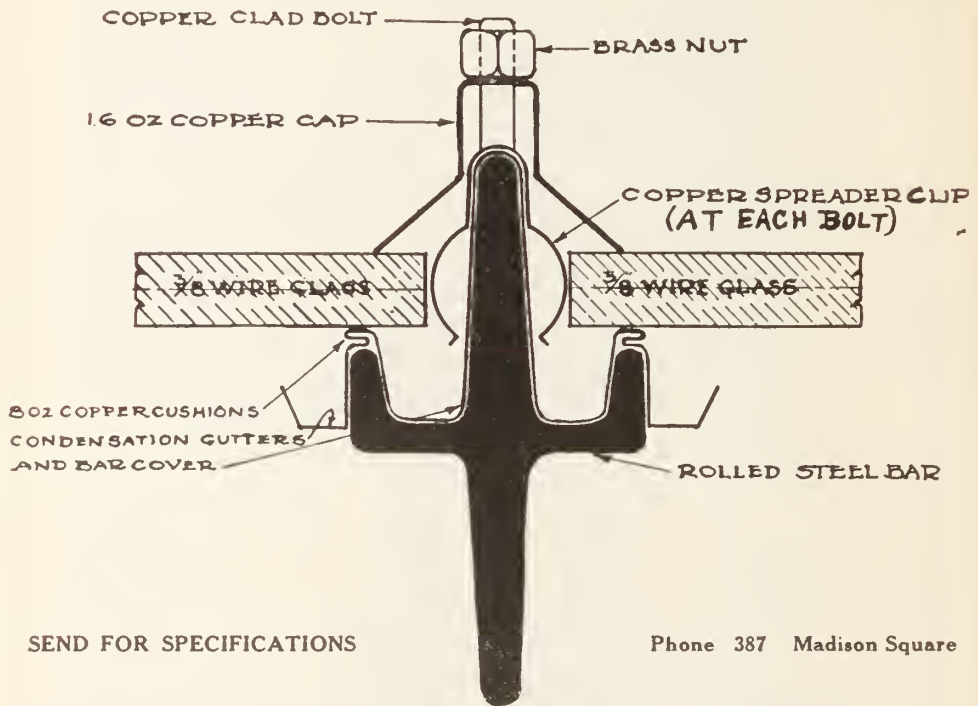
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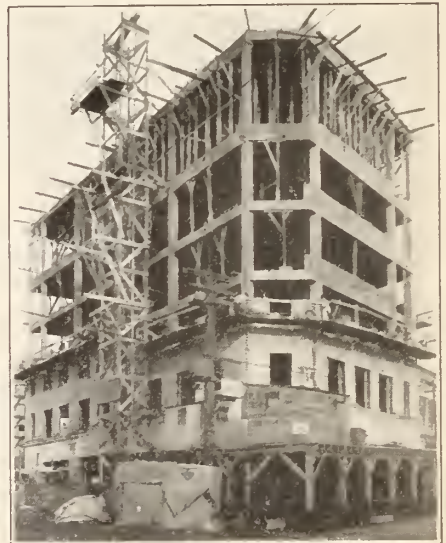
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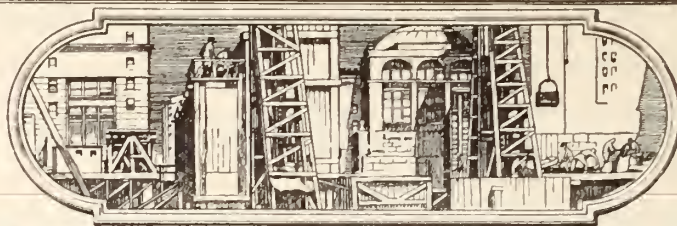
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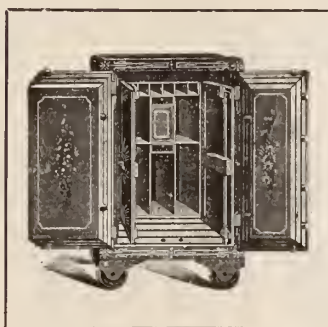
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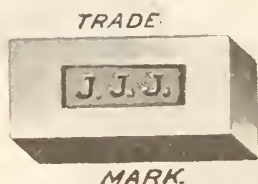
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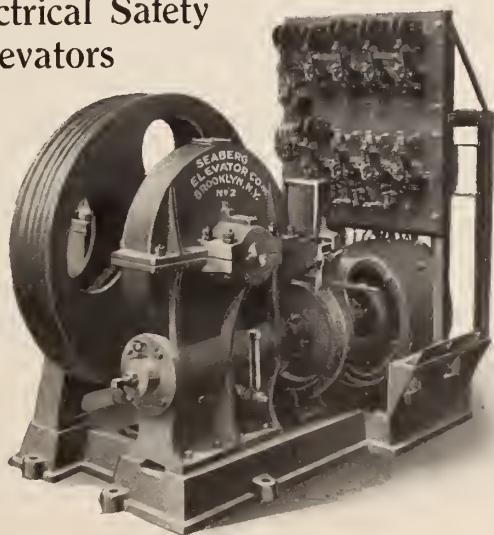
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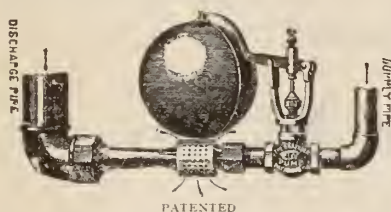
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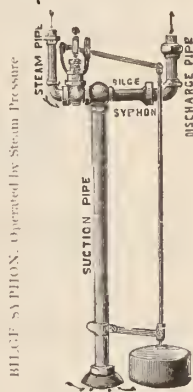
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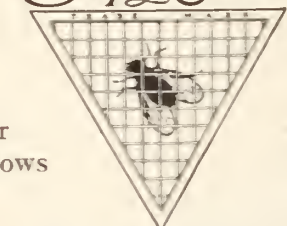
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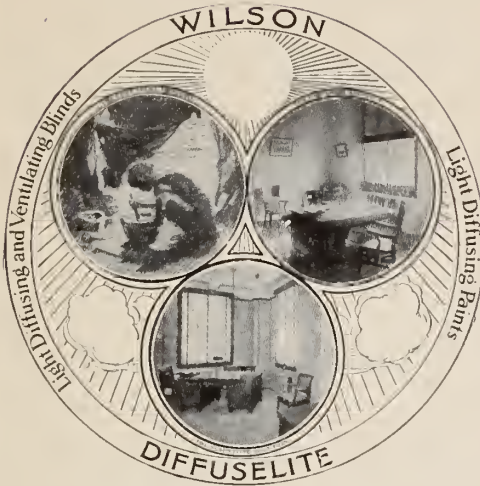
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